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Department of Health and Environment

Selected Special Statistics

Stillbirths and Infant Deaths

Kansas, 2013

Kansas Department of Health and Environment
Division of Public Health
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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

Our Mission – To Protect and Improve the Health and Environment of All Kansans

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Executive Summary

Infant mortality is an important indicator of community health. It is associated with a variety of factors such as economic development, general living conditions, social wellbeing where basic needs are met, rates of illness such as diabetes and hypertension, and quality of the environment. This report builds on information in the *Annual Summary of Vital Statistics, 2013* providing a long-term assessment of progress on infant mortality. The report uses five-year average infant mortality to evaluate trends.

In the last century, the Kansas single year infant mortality rate (IMR) has decreased dramatically, from 73.5 deaths per 1,000 live births in 1912 (2,795 infant deaths) to 6.4 in 2013 (248).

- The single-year Kansas IMR increased slightly from 2012 (6.3 deaths per 1,000 live births) to 6.4 in 2013. The Kansas rate exceeds the Healthy People 2020 (HP2020) objective of 6.0 deaths per 1,000 live births. The White non-Hispanic population IMR (4.9) met the HP2020 target. The Hispanic (7.2) and Black non-Hispanic (15.3) rates did not.

- The Black non-Hispanic infant mortality rate has remained more than twice that of the White non-Hispanic rate for most of the last 20 years.

- During 2009-2013, most Kansas resident infant deaths occurred soon after birth. Almost two-thirds (65.2% or 842 deaths) happened in the neonatal time period (less than 28 days).

- The leading cause of infant mortality was congenital anomalies (23.8%), followed by prematurity or low birth weight (19.4%), sudden unexplained infant death (SUID) causes (17.3%), and maternal factors and complications (10.5%).

- Perinatal deaths include stillbirths and hebdomadal deaths (less than seven days). Complications of placenta, umbilical cord, and membrane was the leading cause of stillbirths; Prematurity or low birthweight was the leading cause for hebdomadal deaths.

- The 2009-2013 premature infant mortality rate of 43.5 per 1,000 live births was over 20 times higher than the rate for infants born at term (2.1). The IMR for very premature infants was 195.7 deaths per 1,000 live births, approximately 93 times as high as than infants born at term.

The *Selected Special Statistics, Stillbirths and Infant Deaths, Kansas, 2013* summarizes vital records data on stillbirths and infant deaths. This report can be found at http://www.kdheks.gov/phi/index.htm. Persons inquiring about additional data needs can call (785) 296-8627.

Introduction

One of the basic indicators of the health of a community or state is infant mortality, the death of an infant before one year of age. The calculated infant mortality rate (IMR), serves as one proxy indicator of population health. It reflects the apparent association between the causes of infant mortality and other factors that are likely to influence the health status of the whole population such as economic development, general living conditions, social wellbeing where basic needs are met, rates of illness such as diabetes and hypertension, and quality of the environment [1].

Nationally, for 2011, the most recent year with final death data, statistics showed the infant mortality rate was 6.1 per 1,000 live births. The leading causes of infant death were congenital malformations; prematurity or low birthweight; maternal factors and complications of pregnancy, labor and delivery; and sudden infant death syndrome (SIDS) [2].

The most recent national linked birth/infant death data set (2008-2010 data) included statistics on characteristics collected with the birth certificate in addition to the death certificate. Risk factors for infant death included Black non-Hispanic mothers, prematurity or low birthweight, multiple deliveries, unmarried mothers, mother's age (both younger and older mothers), no prenatal care, smoking during pregnancy, and low education level [3].

Healthy People 2020 (HP2020), which provides science-based, 10-year national objectives for improving the health of all Americans, includes infant mortality as a leading health indicator. The HP2020 target is 6.0 infant deaths per 1,000 live births [4].

The Kansas Department of Health and Environment's (KDHE) Bureau of Epidemiology and Public Health Informatics (BEPHI) monitors infant mortality and supports programs that promote access to health services for mothers and infants. The Bureau's Division of Public Health Informatics calculates the official state infant mortality rate as part of its ongoing mission to provide data and information to program managers, policy makers, health providers, and the public. This report augments information in the KDHE *Annual Summary of Vital Statistics, 2013* [16] and moves beyond single-year statistics in order to provide more long-term estimates of the true underlying rates.

Methodology

Statistics

Due to small numbers of events, preselected intervals of years are combined to increase data reliability. Five years (2009-2013) are combined for characteristic analysis, and intervals of 20 years and approximately 100 years are used for trend analysis. The long-term (~100 years) infant mortality numbers and rates may be under-reported due to incomplete data collection in the early 1900s.

Additionally, the relative standard error (RSE) is used in this report to evaluate reliability of rates. Values with a relative standard error of 30 percent or less are considered reliable. Values with a relative standard error greater than 30 percent but less than 50 percent are considered unreliable, and rates with RSE greater than 50 percent have been

suppressed in this document. This is consistent with standard National Center for Health Statistics (NCHS) practice [3, 18].

The following statistical tests have been applied where statistically significant differences have been noted in the document. The z-test was used for comparing two infant mortality rates [3]. Poisson Joinpoint regression models were used for trend analysis, and the average annual percent change (APC) was used to characterize the trend over time [5, 6, 7]. Confidence intervals were calculated at the 95% confidence level. If the confidence intervals of two values do not overlap it is considered a conservative estimate of a significant difference [8]. Statistical significance is considered at the 0.05 level.

Five year rolling averages were used to smooth data trends over 20 years since year-to-year variation in infant mortality rates can result in a saw-tooth pattern that obscures underlying trends.

Stillbirths are also included in this report. In Kansas, a stillbirth is defined as a delivery of a fetus in excess of 350 grams other than a live birth and not an induced termination of pregnancy [13]. These events may have risk factors similar to those for infant deaths.

All data reported are based on Kansas residence, unless otherwise noted.

Age Period of Death

The first year of life can be categorized by two major periods, the neonatal period (first 27 days of life) and the post-neonatal period (28 to 364 days of life). The infant deaths occurring in the neonatal period are also further sub-divided into the hebdomadal deaths (0-6 days) and post-hebdomadal deaths (7-27 days). Perinatal period III includes stillbirths and hebdomadal deaths.

Cause of Death Data

The cause of death referred to in this report is the primary or underlying cause of death. It is defined as the disease or injury which initiated the chain of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury. The underlying causes of death are established through a system known as the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) [15]. This system promotes uniformity and comparability in the collection and presentation of mortality data.

In this document, Sudden Infant Death Syndrome (SIDS) deaths (ICD-10 code R95) are combined with sleep related deaths (ICD-10 code W75) and unknown cause (ICD-10 code R99) in some of the figures/tables. This combination is categorized as Sudden Unexpected Infant Death (SUID).

Analyzing SUID is important since the national campaign to reduce the risk of SIDS has entered a new phase and will now include all sleep-related SUIDs. SIDS, a major component of SUID, decreased by about 50 percent in the 1990s with the greatest decline occurring after the “Safe to Sleep” campaign was initiated in 1994 [14]. Since then, the decline in the SIDS rate has been less dramatic This slowed decline in SIDS is likely explained by increasing rates of infant deaths classified as “accidental suffocation” and “unknown cause“ [3].

Population Group Reporting

This method creates a unique matrix of population groups combining race and Hispanic origin for reporting statistics. In the death certificate statistics (unlinked data) of this document, the population groups are classified using the race/ethnicity of the decedent as reported on the death certificate. The funeral director supplies this information, which is provided by an informant such as a family member.

In the linked birth/infant death statistics, the population groups are classified using the race/ethnicity reported on the birth certificate for the mother. For more information on the population groups, see the Technical Notes in the *Annual Summary of Vital Statistics, 2013* [16].

Data Linkage

This report also provides findings based on the linking of birth certificate and infant death certificate data. Where referenced, the linked birth/infant death statistics are based on a death cohort. The death cohort involves linkage of infant deaths with the corresponding live births. These births may have occurred in the same calendar year as the death or in the year prior.

The birth/infant death data analyzed are based on a union of single year linked birth/infant death files created six months after a given event year ended. Linkage of the respective records is performed by the BEPHI Public Health Informatics group using deterministic methodology based on the presence of a birth certificate identification number in the death history file. A manual matching process is used for infant deaths that do not match automatically. Because of the timeframe for creating the annual linked birth/infant death statistical files, infant death reports received later than six months after the end of a given event year are not included in the given event year.

Linked data are an important tool to examine infant mortality comparisons between Kansas and other states including the District of Columbia, or the United States. To obtain statistically reliable state-specific data stratified by race and ethnicity, it is necessary to combine years. The National Center for Health Statistics combines three years; the most recent report includes data from 2008-2010. Infant mortality rates were not calculated for states/District of Columbia when the number of events was less than 20 [3]. For this report, five years (2009-2013) of linked birth/infant deaths were combined to obtain statistically reliable data for stratification on characteristic variables.

For Kansas, between 2009 and 2013, there were 1,292 resident infant deaths reported to KDHE.(Table A) Of those, 1,282 (99.2%) were linked to a birth certificate. Forty-four of the birth records that were linked occurred in 2008. Unlinked records were due to a number of factors beyond the scope of this summary.

Table A. Linked Birth/Infant Deaths, Percent Linked, Kansas, 2009 - 2013

	Infant Deaths, Total	Infant Deaths, Linked File	
Year	Number	Number	%
2009	290	289	99.7
2010	253	251	99.2
2011	247	244	98.8
2012	254	254	100.0
2013	248	244	98.4
Totals	1292	1282	99.2

This method of linking the infant death and their birth records is valuable for exploring the various relationships of the infant deaths with factors surrounding birth and with mother's risk factors

- The death file contains age at death and underlying cause.
- The birth file contains birthweight, gestational age, and information on the mother such as age, marital status, educational level, and maternal risk factors such as tobacco use.

Results

Trend Analyses

In 2013, the Kansas infant mortality rate was 6.4 per 1,000 live births (248 infant deaths). This rate is up slightly from 6.3 per 1,000 live births (254 infant deaths) in 2012, even as the number of infant deaths decreased (Tables 1, 2). The change was not statistically significant.

In the last century, the IMR has decreased dramatically (91.3%) from 73.5 deaths per 1,000 live births in 1912 (2,795 infant deaths) (Figure 1). Stillbirths decreased 83.6 percent from 26.8 stillbirths per 1,000 (live births + stillbirths) in 1912 (1,047 stillbirths) to 4.4 (173 stillbirths) in 2013 (Figure 2). Incomplete reporting of live births, infant deaths, and stillbirths in the early 1900s may have resulted in slightly higher or lower estimated mortality rates for those years.

In the last twenty years, there has been some fluctuation in the IMR from 7.6 in 1994, to the first low of 6.7 in 2003, reaching a high of 7.9 in 2007, and an overall low of 6.2 in 2011. A Poisson regression using Joinpoint and the APC [5, 6], however, indicates that overall there was a statistically significant decreasing trend (p-value < 0.05) from 1994 to 2013 (Figure 3).

Neonatal/Post-Neonatal Period Deaths

Neonatal death rates showed a statistically significant decreasing trend during the period from 1994 to 2013 with some fluctuation; post-neonatal death rates from 1994 to 2007 fluctuated greatly, resulting in no significant trend, however, from 2007 to 2013 a significant decreasing trend was present (Table 2). For neonatal death rates, rolling five year averages showed a slight decrease in most years from 4.8 in 1994-1998 to 4.2 in 2009-2013 (Figure 6). The post-neonatal death rates rolling five year averages showed an

overall decrease from 2.6 in 1994-1998 to a low of 2.2 in 2009-2013, with some fluctuation in the years between (Figure 6).

Perinatal Period III Deaths

In Kansas from 1994-2013, rolling five year averages showed a gradual decline in perinatal death rates, with some fluctuation, decreasing from 9.1 deaths per 1,000 live births in 1994-1998 to 8.1 in 2009-2013 (Figure 7).

Population Groups

For Kansas in 2013, the White non-Hispanic population group had the highest number of infant deaths (137 infant deaths), while the Black non-Hispanic group had the highest rate (15.3 per 1,000 live births) (Table B). The disparity in rates between White and Black non-Hispanic infant deaths was evident in all periods of death (Table B).

Table B. Stillbirth, Perinatal Period III* and Infant Mortality Rates by Selected Population Groups, Kansas, 2013

	Total	White non-Hispanic	Black non-Hispanic	Hispanic any race
Infant deaths †	6.4	4.9	15.3	7.2
Neonatal deaths †	4.3	3.1	11.8	5.0
Post neonatal deaths †	2.1	1.8	3.5	2.1
Stillbirths ‡	4.4	3.5	8.9	6.2
Perinatal period III ‡	8.0	6.1	18.7	10.4

* Perinatal period III includes stillbirths and hebdomadal deaths (deaths that occur prior to the 7th day of life)
†Rate per 1,000 live births
‡Rate per 1,000 (live births + stillbirths)

A population group comparison over 20 years based on five year moving averages (Figure 4) revealed that the Black non-Hispanic population has consistently had the highest infant mortality rates. The rate has fluctuated, reaching a high of 17.1 in 2003-2007 and a low of 13.6 in 2008-2012 and ending with 13.9 in the 2009-2013 period. In the same 20 years, the White non-Hispanic population showed a slight decreasing trend from 6.7 in 1994-1998 to 5.2 in 2009-2013. The IMR in the Hispanic population fluctuated, with a low of 5.9 in 1995-1999; since then, the rate in the Hispanic population has increased in most years to 7.5 in 2008-2012 (ending at 7.2 in 2009-2013). The Black non-Hispanic IMR has remained over twice that of the White non-Hispanic population, with an average ratio of 2.5.

Five Year Characteristic Analysis (2009-2013)

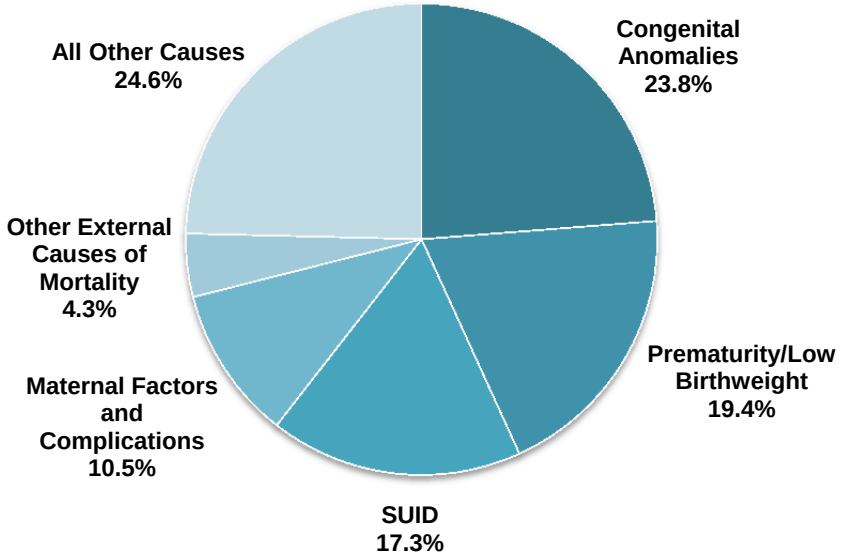
Death Certificate Statistics

Causes of Infant Death

The Kansas infant mortality rate for the period 2009-2013 was 6.4 infant deaths per 1,000 live births. The leading cause of infant mortality was congenital anomalies (Figure A, Table 5). The most frequent congenital anomaly was congenital malformations of the circulatory system (26.1%, ICD-10 codes Q20-Q28), followed by congenital malfor-

mations of the nervous system (19.9%, ICD-10 codes Q00-Q07), and chromosomal abnormalities (17.3%, ICD-10 codes Q90-Q99). Seventy-two percent (72.3%, 222 deaths) of congenital anomaly deaths occurred in the neonatal period (under 28 days). The category “other causes” includes conditions such as respiratory diseases, primary atelectasis, sepsis, cardiac failure/dysrhythmia, and necrotizing enterocolitis.

Figure A
Leading Causes of Infant Deaths
Kansas, 2009-2013



Analysis of select population groups for the 2009-2013 cohort revealed the leading cause of infant death for Black non-Hispanic infants was prematurity or low birthweight. The leading cause of death among White non-Hispanic and Hispanic infants was congenital anomalies (Table C).

Analysis of rates by population group showed that Black non-Hispanic infants died at a significantly greater rate than White non-Hispanic and Hispanic infants where the cause of death was prematurity or low birthweight and SUID. Black non-Hispanic infants died at a significantly greater rate than White non-Hispanic, but not compared to the Hispanic population group, when the cause of death was maternal factors and complications (there was no evidence of a difference between the White non-Hispanic and Hispanic population groups). Among infants that died of congenital anomalies, the infant death rates were not significantly different among these three population groups (Table C).

Table C. Infant Deaths by Selected Population Groups and Leading Causes of Death, Kansas, 2009-2013

Population Group*	Number of Deaths	Percent	Rate†
Black non-Hispanic (n=189)			
1. Prematurity or Low Birthweight	59	31.2	4.4
2. SUID	33	17.5	2.4
3. Congenital Anomalies	23	12.2	1.7
4. Maternal Factors	20	10.6	1.5
White non-Hispanic (n=752)			
1. Congenital Anomalies	195	25.9	1.3
2. SUID	146	19.4	1.0
3. Prematurity or Low Birthweight	114	15.2	0.7
4. Maternal Factors	84	11.2	0.5
Hispanic any-race (n=108)			
1. Congenital Anomalies	59	25.7	1.8
2. Prematurity or Low Birthweight	52	22.6	1.6
3. SUID	24	10.4	0.8
4. Maternal factors	20	8.7	0.6

*Non-Hispanic population group includes unknown Hispanic origin
†Rate per 1,000 live births

Neonatal/Post-Neonatal Period Deaths

There were 842 neonatal deaths (4.2 per 1,000 live births, 65.2%) and 450 post-neonatal deaths (2.2 per 1,000 live births) in the 2009-2013 Kansas infant death cohort (Tables 2, 5). Congenital anomalies were the leading cause of neonatal deaths (26.4%), while SUID was the leading cause of post-neonatal deaths (44.4%) (Table 5).

Perinatal Period III Deaths

For the Kansas 2009-2013 cohort, 1,627 infants died in the perinatal period (8.1 per 1,000 live births and stillbirths) comprising 937 stillbirths and 690 hebdomadal deaths (Table 1). The leading cause of stillbirths was complications of placenta, umbilical cord and membrane (29.7%, ICD-10 code P02) (Table 7) while prematurity or low birthweight was the leading cause of death for hebdomadal period deaths (35.8%) (Table 5).

County Rates

The counties with the highest number of infant deaths in the 2009-2013 cohort included Sedgwick (304 or 23.5% of the total), Johnson (173 or 13.4% of the total), Wyandotte (104 or 8.0% of the total), and Shawnee (83 or 6.4% of the total). These four counties accounted for 51.4 percent of all infant deaths (Table 4).

The counties with the highest reliable (RSE ≤ 30%) infant mortality rates, included Neosho (13.0 infant deaths per 1,000 live births), Jefferson (11.4), Labette (10.1), Reno (9.9), and Lyon (9.7); while the counties with the lowest (reliable) rates were Douglas (2.7), Leavenworth (4.0), Johnson (4.7), Crawford (4.7), and Butler (5.9) (Table 4).

Since the number of deaths was too small for analysis in many counties, counties were combined into Public Health Regions (Figure 5). The region with the highest reliable

(RSE ≤ 30%) infant mortality rate was the Southwest Surveillance Region at 8.5 per 1,000 live births and the region with the lowest infant mortality rate was the Southwest Kansas (SW KS) Health Initiative Region at 3.1 per 1,000 live births. The infant mortality rate for the Kansas City Metro Region (5.0) was statistically significantly lower than the state rate (Figure 5).

Zip Code Rates

Several zip codes had enough deaths to allow analysis on the 2009-2013 cohort. The zip codes with the highest reliable (RSE ≤ 30%) mortality rates included four zip codes located in Sedgwick County: 67214 (15.7 deaths per 1,000 live births), 67218 (14.2), 67213 (11.3), and 67210 (11.2), and zip code 67042 (Butler County, 11.1). The zip-codes with the lowest reliable (RSE ≤ 30%) rates were 66062 (Johnson County, 3.9), 66441 (Geary County, 5.0), 66048 (Leavenworth, 5.3), 66061 (Johnson County, 6.1), 67216 (Sedgwick County, 6.5).

Linked Birth/Infant Death Statistics

Kansas Statistics

In this section, a variety of maternal and infant characteristics are presented on the linked birth and infant death data file (linked file) from 2009 to 2013. The linked file differs slightly from the mortality file (infant deaths from death certificates in 2009 to 2013), with 10 infant deaths not linked to a birth record. The Kansas linked file for 2009-2013 contains 1,282 (99.2%) of the 1,292 infant deaths contained in the mortality file.

Population group of the infant was known for 1,279 of the 1,282 linked records. The mother's race was reported as White non-Hispanic in 747 live births (58.3%), Black non-Hispanic in 188 live births (14.7%), Native American non-Hispanic in 11 live births (0.9%), Asian or Pacific Islander non-Hispanic in 23 live births (1.8%), Multi-racial non-Hispanic in 65 live births (5.1%), other race non-Hispanic in 8 live births (0.6%), and Hispanic (all races) in 227 live births (17.7%).

Cause of Death

The leading cause of death among the 1,282 infants in the 2009-2013 linked file was congenital anomalies (305 deaths, 23.8%). This was followed by prematurity or low birthweight (251 deaths, 19.6%), SUID (ICD-10 codes R95, R99, and W75, with combined 220 deaths, 17.2%), and maternal factors (136 deaths, 10.6%) (Table 8).

Prematurity is an important factor in infant death, even though short gestation and low birthweight may not be the primary cause. Among the infant deaths with primary cause of death as congenital anomalies, half (50.2%) were born preterm – primarily late preterm (25.1%). Ninety-three percent of the infant deaths due to maternal factors were born prematurely, with 86.7 percent born very premature (Table 8). The cause of death categorized as maternal factors and complications of pregnancy, labor and delivery include complications such as premature rupture of the membrane, placental separation, chorioamnionitis, and incompetent cervix.

Among infants where the cause of death was classified as SUID, 83.6 percent were born early term or later (Table 8).

Birthweight

Of the 1,282 deaths, birthweight of the infant was known for 1,276 deaths. Three hundred eighteen (24.9%) of the deaths occurred to infants with birthweights of less than 500 grams; 279 (21.9%) of the deaths occurred to infants with birthweights of 500 to 1,499 grams; 206 (16.1%) of deaths occurred to infants with birthweights of 1,500 to 2,499 grams; and 473 (37.1%) of deaths occurred to infants with birthweights of 2,500 grams or more (Table 9).

Among the infant deaths where birthweight was known, 803 infants (62.9%) were low birthweight (less than 2500 grams). In the same time period (2009-2013), only 7.2 percent of all live births had low birthweight (Table 9, 10).

Gestational Age

Gestational age was known for 1,272 of the 1,282 linked records. Five hundred ninety of the infants (46.4%) were very premature (less than 32 weeks), 61 (4.8%) were moderately premature (32 to 33 weeks), 132 (10.4%) were late premature (34 to 36 weeks), 208 (16.4%) were early term (37 and 38 weeks), and 281 (22.1%) were born at term (Table 9).

Given that gestational age was known, 783 (61.6%) of the infant deaths were premature (less than 37 weeks gestation) (Table 9). In the same time period (2009-2013), nine percent of all live births were premature (Table 10).

A study of gestational age by mother's population group reveals that among the Black non-Hispanic population in 2009 through 2013, 68.1 percent of the infant deaths were premature; 59.3 percent of the infant deaths to White non-Hispanic mothers were premature, and among the Hispanic population, 67.6 percent were premature (Table 9).

Plurality

Birth plurality (the total number of births resulting from a single pregnancy) was known for all 1,282 of the linked deaths. Eighty-six percent (86.1%) of the infants were singletons at birth (1,104), 12.5 percent (160) were part of twin deliveries, and 1.4 percent (18) were triplet or above deliveries. Fourteen percent (13.9%, 178 deaths) of infant deaths in the linked file occurred among multiple births, whereas for all live births in the same time period (2009-2013) only 3.3 percent were part of a multiple birth delivery (Table 9, 10).

Mother's Age Group

Age-group of the mother was known for 1,278 of the infant deaths. The highest percentage of deaths occurred to infants born to women aged 20-24 (32.7%), followed by women aged 25-29 (27.2%), women aged 30-34 (18.1%), and women aged 10-19 (11.4%). The highest percent of all live births in the same time period was to mothers 25-29 years of age (31.3%), followed by 20-24 years of age (26.0%) (Table 9). A lower percentage of infant deaths occured among mothers aged 25-34 than births for the same age group, and a higher percentage among mothers aged 10-24 (Table 10).

Mother's Education

For mothers 25 years of age and older, the education level was known for 701 of the linked deaths. Mothers whose education level was high school or GED had the highest percentage of infant deaths (24.3%), followed by those with some college but no degree (21.4%), and those with a Bachelor's Degree (21.1%). Mothers who have a doctorate

degree had the lowest percent (1.6%) of infant deaths. When comparing to the distribution of deaths by mothers' education level for the live births in the same time period (2009-2013), there was a higher percentage of mothers with a Bachelor's Degree (29.7%) and a lower percentage of mothers with a high school degree or GED (16.3%) (Table 9, 10).

Marital Status

Marital status at the time of pregnancy was known for 1,271 (99.1%) of the linked deaths (2009-2013). In fifty-one percent (50.7%) of the infant deaths, the mother was not married at the time of her pregnancy or delivery (Table 9). This compared with 37.2 percent of live births (2009-2013) where the mother reported she was not married (Table 10).

Prenatal Care

The month prenatal care began was known for 1,153 of the linked infant deaths. Seventy percent (70.2%) of these linked infant deaths started prenatal care in the first trimester. Seventy-seven percent (77.0%) of all live births in the same time period (2009-2013) started prenatal care in the first trimester. Seven percent of linked infant deaths (6.9%) had no prenatal care (79 infant deaths); however, only 1.0 percent of births had no prenatal care, resulting in a mortality rate among infants with no prenatal care at 41.8 deaths per 1,000 live births (Table 9, 10).

Adequacy of Prenatal Care Utilization (APNCU) Index

The APNCU index was known for 1,109 linked records. Among those with a known APNCU index, half (50.0%) had Adequate Plus prenatal care, 25.1% had Adequate, 4.5% had Intermediate and 20.5% had Inadequate prenatal care. When compared to the APNCU of mothers in the all live births file, there was a higher proportion of mothers with inadequate (13.0%) and adequate plus (31.2%) prenatal care whose infants died than among the population of all live births. There was also a much lower percentage of infant deaths to mothers with adequate prenatal care than the general live birth population in the same time period (49.7%) (Table 9, 10).

Smoking

Smoking status was reported in 1,245 (97.1%) of the linked infant deaths. Mothers reported smoking at some time during pregnancy in 23.5 percent of the infant deaths compared with 14.2 percent of all live births from 2009 to 2013 (Table 9, 10).

Pay Source

Delivery payer was known for 1,248 of linked infant deaths. The highest percent of these births were paid for by Medicaid (41.4%), followed by private insurance (39.5%), and self-pay (10.1%). For all live births in the 2009-2013 cohort with payer indicated, only 32.1 percent were paid for by Medicaid, and 51.7 percent were paid for by private insurance. The mortality rate was 8.1 per 1,000 live births paid by Medicaid compared to 4.8 per 1,000 live births paid by private insurance (Table 9, 10).

National Statistics

Nationally, final birth and death data allows for the creation of the linked birth/infant death data set for the United States. From the most recently published report on linked infant death/birth statistics (2010 period), the infant mortality rate for the United States was 6.1 per 1,000 live births, which compares to 6.3 for Kansas residents for the same

year [3]. This report combines the years 2008-2010 for analysis of birth characteristics such as race and ethnicity. The national infant mortality rate was 6.4 per 1,000 live births for this three year period; White non-Hispanic infant mortality was 5.3, Black non-Hispanic infant mortality was 12.2, and Hispanic infant mortality was 5.4 [3].The same methodology used for these national statistics was used for Kansas 2008-2010 and the results can be found in *Selected Special Statistics, Stillbirths and Infant Deaths, Kansas, 2012* [17].

Discussion

Kansas Statistics

In a little over a century, the Kansas IMR has decreased dramatically, from 73.5 deaths per 1,000 live births in 1912 to 6.4 in 2013. In the last twenty years, the overall decreasing trend of the IMR was statistically significant even with the fluctuations in this time period.

The IMR in Kansas in 2013 was slightly higher than the historic low of 6.2 in 2011, and both exceeded the Healthy People 2020 objective of 6.0 deaths per 1,000 live births. Data analysis by population groups showed the White non-Hispanic population (4.9 per 1,000 live births) met the HP2020 target, but the Hispanic (7.2) and Black non-Hispanic (15.3) population groups did not [4].

Overall, in Kansas 2009-2013, 23.8 percent of infant deaths were attributed to congenital anomalies, 19.4 percent were attributed to prematurity or low birthweight, and 17.3 percent were attributed to SUID. Black non-Hispanics were at an increased risk of infant deaths from prematurity and SUID, and Hispanic infants were at an increased risk of death from prematurity compared to White non-Hispanics.

Most infant deaths in Kansas in 2009 to 2013 occurred soon after birth. Almost two-thirds happened in the neonatal time period (less than 28 days of age), and over half occurred in the first week (Table 5).

Risk Factors

Analysis of the linked file revealed that low birthweight or prematurity were primary risk factors for infant death even when the underlying or primary cause of death was not prematurity or low birthweight.

Gestational age-specific analysis (linked file) showed an infant mortality rate of 43.5 per 1,000 live births for infants born prematurely, 20 times that for infants born at term (2.1 deaths per 1,000 live births). Similarly, the infant mortality rate for very premature infants (less than 32 weeks, 195.7 per 1,000 live births) was 92 times higher than the rate for infants born at term.

Additional notable risk factors for infant deaths (linked file) included no prenatal care (6.9% of linked deaths), multiple births (13.9%), mothers who smoked during pregnancy (23.5% of infant deaths), and out-of-wedlock births (50.7%). Analysis of mother's age showed the highest percent of infant deaths among mothers age 20-24 (32.7%), but the highest rate was among 10-19 year old adolescents (8.1 infant deaths per 1,000 live births).

National Statistics

Comparing Kansas, other states, and national statistics on infant mortality is complicated by the fact that national statistics are published much later than state statistics. The most recent available final national birth data is for 2012, but the most recent available final national death data is for 2011 [2, 10]. Final results indicate a national infant mortality rate of 6.1 per 1,000 live births, compared to 6.2 for Kansas residents in 2011. The difference between these two rates is not statistically significant.

The most recently published national report that analyzed linked infant mortality used 2008-2010 data. Nationally, the infant mortality rate was 6.4 per 1,000 live births for this period [3]. This report also presents the national and state infant mortality rates by race and Hispanic origin. The Kansas rates remain higher than the national rates for all population subgroups [3].

Limitations

This report's findings are subject to several limitations. An important concern is the issue of receiving vital events from other states within the KDHE reporting deadline. Vital statistics are gathered on an occurrence basis but are traditionally reported on a residence basis. For complete residence statistics, reports must be received from other states for events occurring to Kansas residents. Because of delays or other late reporting, some out-of-state vital event reports have not been received by KDHE by the cutoff date of June 30 of the year following the event year. Past evaluations indicate that over 99 percent of all vital events to Kansas residents are received before the cutoff date.

Evaluation of the linked birth/infant death cohort is subject to limitations due to the inability to link all deaths to a corresponding birth report. This inability may be due to a number of reasons related to receipt of the corresponding record from another state, name differences between the two reports, both events not occurring in Kansas, or residency changes.

Additionally, comparison of Kansas linked data to other state or national data has limitations due to the timeliness of the national reports as well as differences in methodology. As mentioned earlier, out-of-state births may not be available to match infant deaths at the state level, but are available for matching at the national level.

The ICD-10 death classification system limits the bias of human coding of mortality information. The system also attempts to reduce the effect of spelling errors or placement of literal information in the cause of death fields. One limitation is the system's inability to take into account differences in knowledge and attitudes among physicians who complete the cause of death information. Individual biases, unfamiliarity with the patient, or inability to perform an autopsy may affect the information available to the physician when certifying the cause of death. While many death certificates contain four full lines of detailed information on the events or illnesses leading up to the death, some death certificates contain only limited information.

The causes of stillbirths are not as well documented as those of infant deaths. The American Congress of Obstetricians and Gynecologists recommends an increase in the

percentage of stillbirths for which placental evaluation is performed and autopsy is offered [12]. Additionally, since KSA 65-2401 [13] defines stillbirth by weight of the fetus (>350 grams), vital records data does not represent the full picture of all fetal deaths.

Smoking status and other potential risk factors may be under-reported on birth certificates.

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Table 1
Births, Stillbirths, and Infant Deaths by Year by Period of Death
Kansas, 1994-2013

Year	Total * Deliveries	Live Births	Stillbirth	Hebdomadal † Deaths	Perinatal ‡ Deaths	Neonatal § Deaths	Postneonatal ¶ Deaths	Infant # Deaths
1994	37,500	37,269	231	140	371	177	108	285
1995	37,270	37,087	183	134	317	166	90	256
1996	36,703	36,524	179	157	336	199	100	299
1997	37,393	37,191	202	147	349	173	101	274
1998	38,571	38,372	199	132	331	172	91	263
1999	38,923	38,748	175	159	334	189	92	281
2000	39,831	39,654	177	146	323	174	92	266
2001	39,041	38,832	209	148	357	178	107	285
2002	39,484	39,338	146	155	301	192	90	282
2003	39,559	39,353	206	138	344	177	85	262
2004	39,739	39,553	186	144	330	176	108	284
2005	39,895	39,701	194	153	347	196	101	297
2006	41,088	40,896	192	137	329	176	117	293
2007	42,137	41,951	186	163	349	211	122	333
2008	41,997	41,815	182	160	342	193	110	303
2009	41,601	41,388	213	144	357	176	114	290
2010	40,607	40,439	168	143	311	170	83	253
2011	39,816	39,628	188	121	309	157	90	247
2012	40,499	40,304	195	142	337	173	81	254
2013	38,978	38,805	173	140	313	166	82	248

*Total Deliveries = Live Births + Stillbirths.

†Hebdomadal Deaths = Deaths at less than 7 days of age.

‡Perinatal Deaths = Stillbirths + Hebdomadal Deaths.

§Neonatal Deaths = Deaths at less than 28 days of age.

¶Postneonatal Deaths = Deaths between 28 days and 1 year of age.

#Infant Deaths = Deaths under 1 year of age.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 2
Perinatal/Infant Mortality Rates by Period of Death
Kansas, 1994-2013

Year	Stillbirth*	Hebdomadal Deaths†	Perinatal Deaths*	Neonatal Deaths †		Postneonatal Deaths†	Infant Deaths†	
				KS	US		KS	US
1994	6.2	3.8	9.9	4.7	5.1	2.9	7.6	8.0
1995	4.9	3.6	8.5	4.5	4.9	2.4	6.9	7.6
1996	4.9	4.3	9.2	5.4	4.8	2.7	8.2	7.3
1997	5.4	4.0	9.3	4.7	4.8	2.7	7.4	7.2
1998	5.2	3.4	8.6	4.5	4.8	2.4	6.9	7.2
1999	4.5	4.1	8.6	4.9	4.7	2.4	7.3	7.1
2000	4.4	3.7	8.1	4.4	4.6	2.3	6.7	6.9
2001	5.4	3.8	9.1	4.6	4.5	2.8	7.3	6.9
2002	3.7	3.9	7.6	4.9	4.7	2.3	7.2	7.0
2003	5.2	3.5	8.7	4.5	4.6	2.2	6.7	6.9
2004	4.7	0.1	8.3	4.4	4.5	2.7	7.2	6.8
2005	4.9	3.9	8.7	4.9	4.5	2.5	7.5	6.9
2006	4.7	3.3	8.0	4.3	4.5	2.9	7.2	6.7
2007	4.4	3.9	8.3	5.0	4.4	2.9	7.9	6.8
2008	4.3	3.8	8.1	4.6	4.3	2.6	7.2	6.6
2009	5.1	3.5	8.6	4.3	4.2	2.8	7.0	6.4
2010	4.1	3.5	7.7	4.2	4.1	2.1	6.3	6.2
2011	4.7	3.1	7.8	4.0	4.1	2.3	6.2	6.1
2012	4.8	3.5	8.3	4.3	n.a.	2.0	6.3	n.a.
2013	4.4	3.6	8.0	4.3	n.a.	2.1	6.4	n.a.

*Per 1,000 (live births + stillbirths).

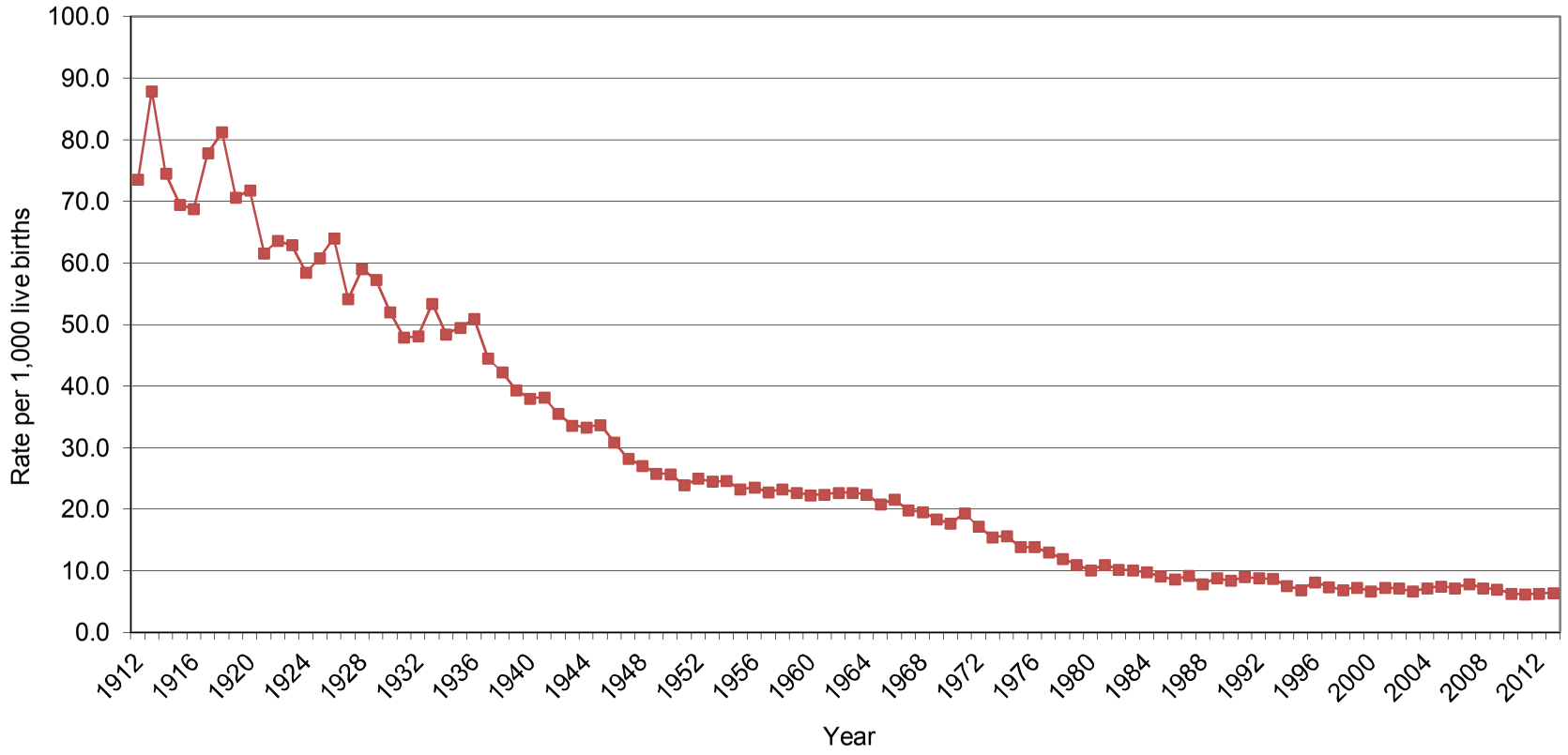
†Per 1,000 live births.

n.a. = US final death data for 2012 and 2013 are not available

Residence data

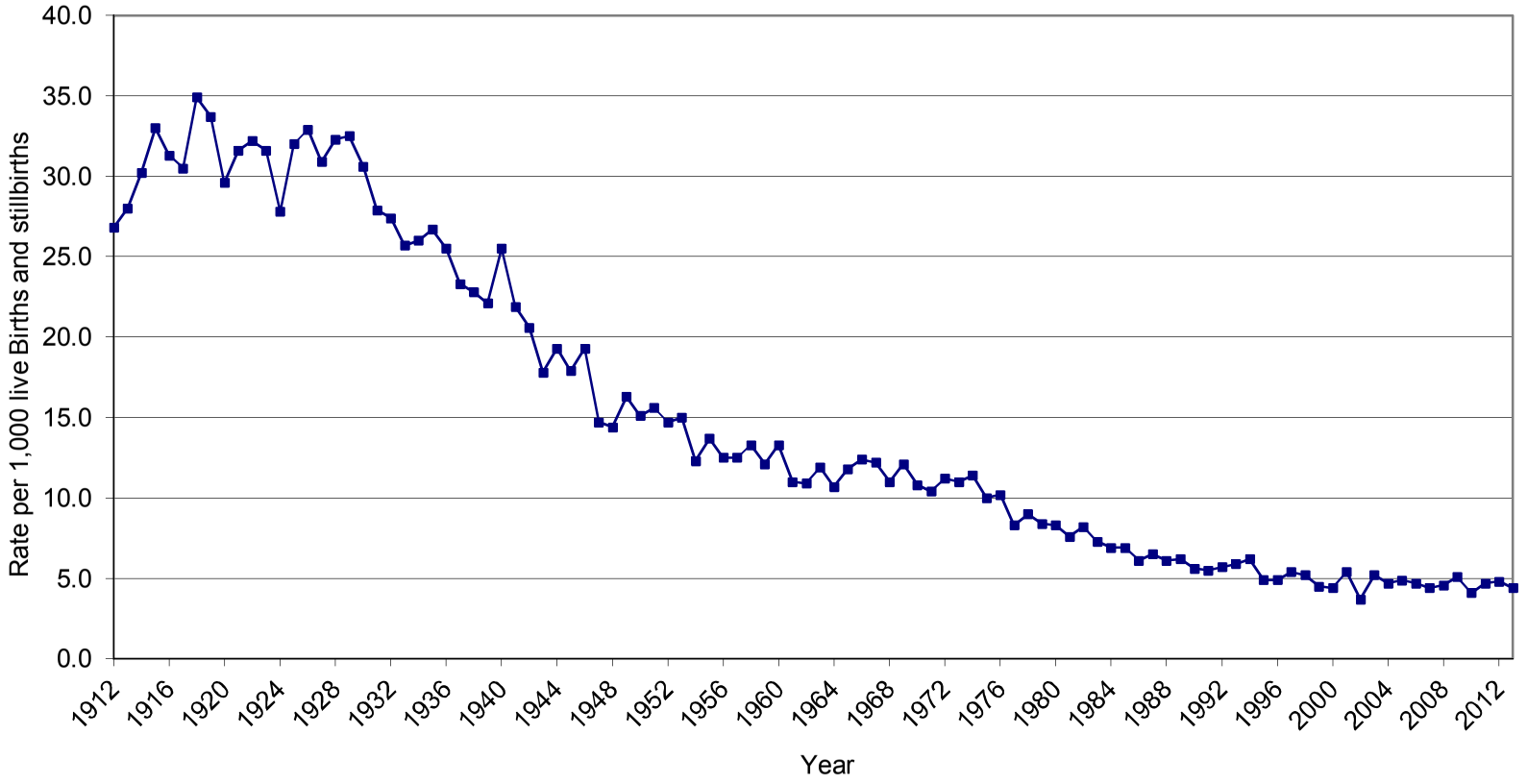
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 1
Infant Mortality Rates
Kansas, 1912-2013



Residence data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

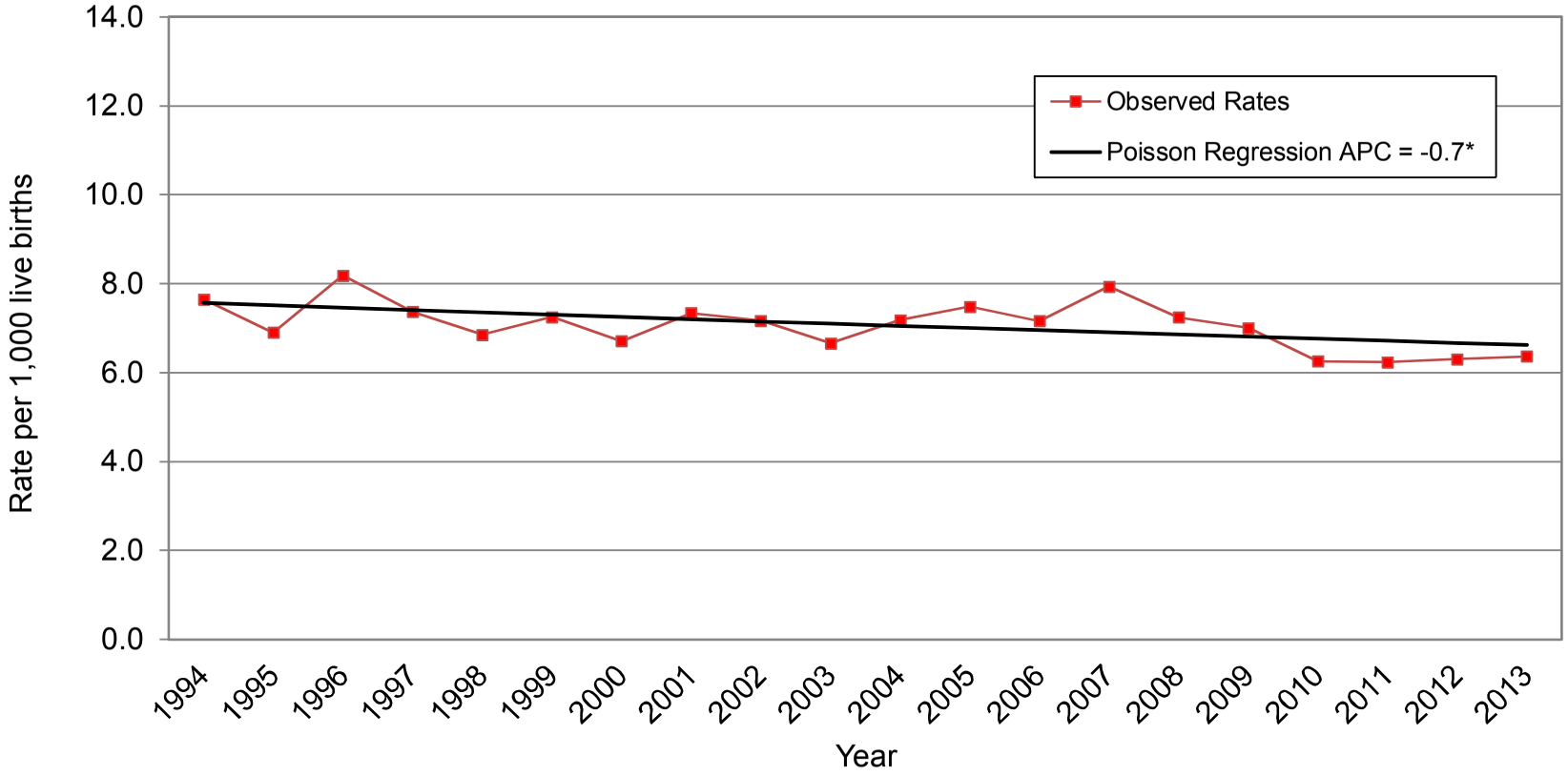
Figure 2
Stillbirth Mortality Rates
Kansas, 1912-2013



Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 3
Trend in Infant Mortality Rates
Kansas, 1994-2013



*The Annual Percent Change (APC) shows a statistically significant trend, alpha = 0.05.
Residence data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 3
Infant Deaths and Mortality Rates*
By Selected Population Group of Mother§
Kansas, 1994-2013

Year	White Non-Hispanic†			Black Non-Hispanic†			Black NH‡ to White NH‡ Ratio	Hispanic Any Race			Total Infant Mortality Rate
	Live Births	Infant Deaths	Rate	Live Births	Infant Deaths	Rate		Live Births	Infant Deaths	Rate	
1994	30,453	215	7.1	3,101	49	15.8	2.2	2,656	15	5.6	7.6
1995	30,221	184	6.1	2,850	51	17.9	2.9	2,812	17	6.0	6.9
1996	29,473	212	7.2	2,738	63	23.0	3.2	3,198	18	5.6	8.2
1997	29,659	189	6.4	2,766	46	16.6	2.6	3,525	29	8.2	7.4
1998	30,389	209	6.9	2,746	27	9.8	1.4	3,873	25	6.5	6.9
1999	30,362	215	7.1	2,815	42	14.9	2.1	4,204	15	3.6	7.3
2000	30,538	192	6.3	2,822	33	11.7	1.9	4,742	32	6.7	6.7
2001	29,703	190	6.4	2,745	54	19.7	3.1	4,875	36	7.4	7.3
2002	29,811	187	6.3	2,845	44	15.5	2.5	5,006	40	8.0	7.2
2003	29,482	172	5.8	2,730	40	14.7	2.5	5,417	45	8.3	6.7
2004	29,624	200	6.8	2,782	46	16.5	2.4	5,458	28	5.1	7.2
2005	28,903	181	6.3	2,670	45	16.9	2.7	6,073	52	8.6	7.5
2006	29,392	181	6.2	2,801	49	17.5	2.8	6,568	41	6.2	7.2
2007	30,170	205	6.8	2,856	56	19.6	2.9	6,676	56	8.4	7.9
2008	29,863	184	6.2	2,936	39	13.3	2.2	6,781	57	8.4	7.2
2009	29,471	178	6.0	2,830	44	15.5	2.6	6,790	40	5.9	7.0
2010	29,000	142	4.9	2,780	33	11.9	2.4	6,407	50	7.8	6.3
2011	28,382	150	5.3	2,708	35	12.9	2.4	6,293	42	6.7	6.2
2012	28,995	145	5.0	2,682	38	14.2	2.8	6,286	54	8.6	6.3
2013	27,821	137	4.9	2,549	39	15.3	3.1	6,139	44	7.2	6.4

* Rate per 1,000 live births.

† Due to changes in the collection of the race item on certificates, use caution when comparing 2005-2012 data to prior years. See Technical Notes.

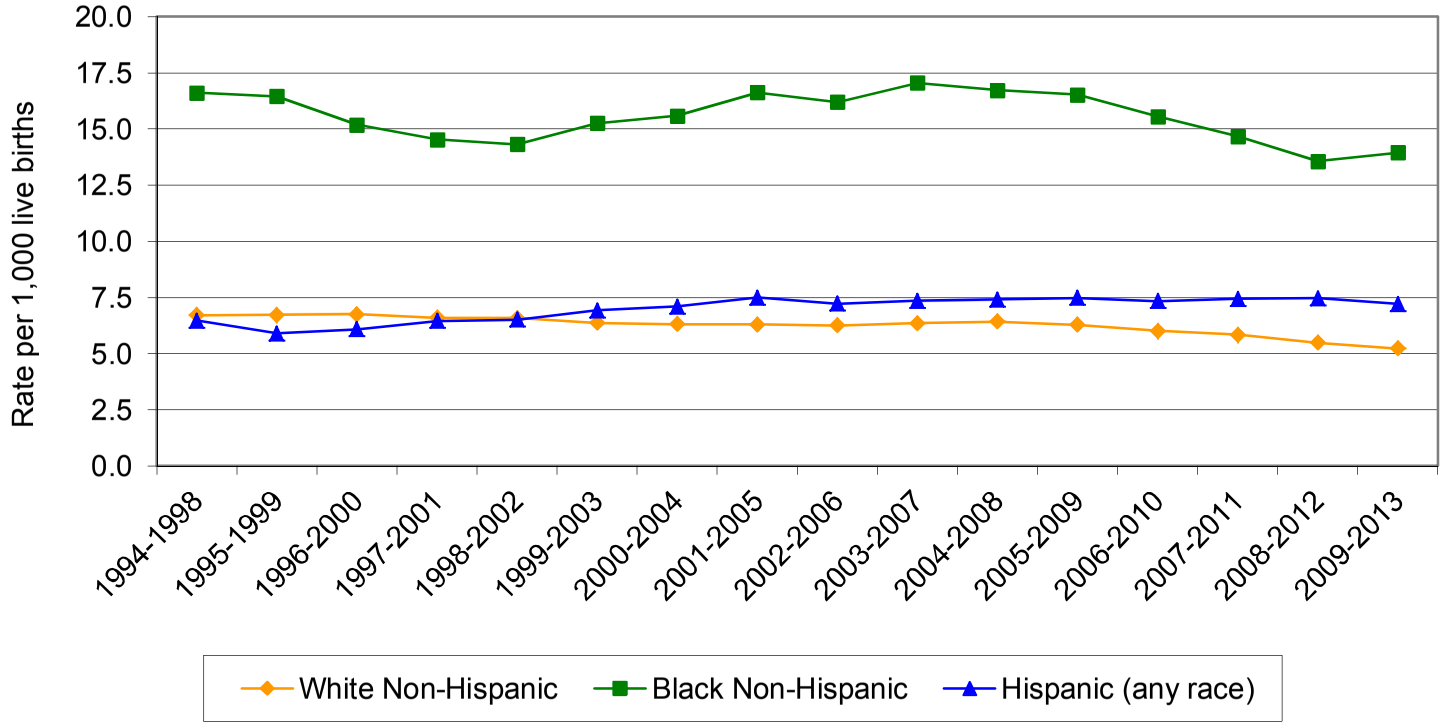
‡ NH = non-Hispanic, population group includes unknown Hispanic origin.

§ Other non-Hispanic data is not included in this table due to small numbers but is available upon request.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 4
Five Year Average Infant Mortality Rates
by Population Group of Mother
Kansas, 1994-2013



Residence data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 4
Infant Deaths and Mortality Rates by County of Residence
And Peer Group*
Kansas, 2009-2013

County of Residence	Year					Total Infant Deaths	Total Live Births	Infant Mortality Rate†	95% Confidence Intervals	
	2009	2010	2011	2012	2013	2009-2013	2009-2013	2009-2013	Lower	Upper
Kansas	290	253	247	254	248	1,292	200,564	6.4	6.1	6.8
Allen	1	0	2	1	0	4	753	5.3 ‡	1.4	13.6
Anderson	1	0	0	0	2	3	498	n/a	n/a	n/a
Atchison	2	1	3	2	1	9	1,056	8.5 ‡	3.9	16.2
Barber	0	0	0	0	0	0	327	0.0	0.0	0.0
Barton	1	3	6	2	1	13	1,851	7.0	3.7	12.0
Bourbon	1	2	1	2	0	6	1,062	5.6 ‡	2.1	12.3
Brown	0	0	3	1	1	5	708	7.1 ‡	2.3	16.5
Butler	3	8	3	3	6	23	3,881	5.9	3.8	8.9
Chase	0	0	0	0	0	0	122	0.0	0.0	0.0
Chautauqua	1	1	1	0	0	3	174	n/a	n/a	n/a
Cherokee	1	2	3	0	0	6	1,194	5.0 ‡	1.8	10.9
Cheyenne	1	0	0	1	0	2	147	n/a	n/a	n/a
Clark	0	0	1	0	0	1	122	n/a	n/a	n/a
Clay	3	1	1	1	1	7	536	13.1 ‡	5.3	26.9
Cloud	0	1	1	1	0	3	611	n/a	n/a	n/a
Coffey	0	1	2	0	0	3	433	n/a	n/a	n/a
Comanche	0	0	0	0	0	0	122	0.0	0.0	0.0
Cowley	4	5	4	1	4	18	2,355	7.6	4.5	12.1
Crawford	2	2	2	3	3	12	2,531	4.7	2.4	8.3
Decatur	0	0	0	1	0	1	153	n/a	n/a	n/a
Dickinson	1	1	2	4	2	10	1,187	8.4 ‡	4.0	15.5
Doniphan	0	0	0	0	0	0	420	0.0	0.0	0.0
Douglas	1	4	1	6	5	17	6,192	2.7	1.6	4.4
Edwards	0	0	1	2	0	3	180	n/a	n/a	n/a
Elk	1	0	0	0	1	2	146	n/a	n/a	n/a
Ellis	1	1	5	2	1	10	1,955	5.1 ‡	2.5	9.4
Ellsworth	0	0	0	1	0	1	319	n/a	n/a	n/a
Finney	6	2	2	7	6	23	3,621	6.4	4.0	9.5
Ford	5	7	5	7	5	29	3,429	8.5	5.7	12.1
Franklin	1	1	2	3	1	8	1,649	4.9 ‡	2.1	9.6
Geary	10	9	8	4	6	37	4,960	7.5	5.3	10.3
Gove	0	0	0	1	0	1	160	n/a	n/a	n/a
Graham	1	0	0	1	0	2	131	n/a	n/a	n/a
Grant	0	0	0	2	0	2	637	n/a	n/a	n/a
Gray	1	0	1	0	2	4	466	8.6 ‡	2.3	22.0
Greeley	0	0	0	0	0	0	98	0.0	0.0	0.0
Greenwood	0	0	0	1	1	2	310	n/a	n/a	n/a
Hamilton	0	0	0	0	0	0	234	0.0	0.0	0.0
Harper	1	1	0	0	2	4	373	10.7 ‡	2.9	27.5
Harvey	4	3	2	3	4	16	2,257	7.1	4.1	11.5
Haskell	1	2	1	1	0	5	306	16.3 ‡	5.3	38.1
Hodgeman	0	0	0	0	0	0	113	0.0	0.0	0.0
Jackson	1	1	1	2	0	5	822	6.1 ‡	2.0	14.2
Jefferson	1	4	2	2	2	11	966	11.4	5.7	20.4
Jewell	0	0	0	0	0	0	131	0.0	0.0	0.0
Johnson	41	31	36	31	34	173	37,067	4.7	4.0	5.4
Kearny	1	0	1	0	0	2	303	n/a	n/a	n/a
Kingman	0	0	2	0	0	2	416	n/a	n/a	n/a
Kiowa	2	1	0	0	0	3	166	n/a	n/a	n/a
Labette	3	4	3	2	2	14	1,384	10.1	5.5	17.0
Lane	0	0	0	0	0	0	105	0.0	0.0	0.0
Leavenworth	5	4	3	2	5	19	4,797	4.0	2.4	6.2
Lincoln	0	0	0	0	0	0	169	0.0	0.0	0.0
Linn	0	0	0	2	0	2	482	n/a	n/a	n/a
Logan	1	1	0	0	0	2	158	n/a	n/a	n/a

Table 4
Infant Deaths and Mortality Rates by County of Residence
And Peer Group*
Kansas, 2009-2013

County of Residence	Year					Total Infant Deaths	Total Live Births	Infant Mortality Rate†	95% Confidence Intervals	
	2009	2010	2011	2012	2013	2009-2013	2009-2013	2009-2013	Lower	Upper
Lyon	5	4	4	5	3	21	2,160	9.7	6.0	14.9
McPherson	5	2	4	2	1	14	1,697	8.2	4.5	13.8
Marion	5	2	1	0	0	8	568	14.1 ‡	6.1	27.8
Marshall	1	1	4	0	0	6	584	10.3 ‡	3.8	22.4
Meade	0	0	1	0	0	1	293	n/a	n/a	n/a
Miami	2	4	1	2	0	9	1,836	4.9 ‡	2.2	9.3
Mitchell	1	1	0	0	0	2	381	n/a	n/a	n/a
Montgomery	2	0	3	4	0	9	2,297	3.9 ‡	1.8	7.4
Morris	0	0	1	0	0	1	308	n/a	n/a	n/a
Morton	0	0	0	0	0	0	213	0.0	0.0	0.0
Nemaha	1	0	1	3	2	7	674	10.4 ‡	4.2	21.4
Neosho	7	3	0	3	1	14	1,077	13.0	7.1	21.8
Ness	0	0	0	1	1	2	160	n/a	n/a	n/a
Norton	0	0	0	1	2	3	256	n/a	n/a	n/a
Osage	1	0	1	1	2	5	853	5.9 ‡	1.9	13.7
Osborne	0	0	1	1	1	3	206	n/a	n/a	n/a
Ottawa	0	1	0	0	0	1	313	n/a	n/a	n/a
Pawnee	1	0	0	2	0	3	365	n/a	n/a	n/a
Phillips	0	0	0	1	1	2	299	n/a	n/a	n/a
Pottawatomie	1	2	1	1	2	7	1,809	3.9 ‡	1.6	8.0
Pratt	1	1	1	0	1	4	670	6.0 ‡	1.6	15.3
Rawlins	0	1	1	0	0	2	120	n/a	n/a	n/a
Reno	7	7	7	3	14	38	3,853	9.9	7.0	13.5
Republic	0	0	0	0	1	1	234	n/a	n/a	n/a
Rice	0	1	1	0	0	2	611	n/a	n/a	n/a
Riley	12	4	2	9	7	34	5,477	6.2	4.3	8.7
Rooks	1	0	0	0	0	1	325	n/a	n/a	n/a
Rush	0	0	1	0	0	1	144	n/a	n/a	n/a
Russell	1	3	1	0	0	5	438	11.4 ‡	3.7	26.6
Saline	5	6	4	3	7	25	3,960	6.3	4.1	9.3
Scott	2	1	0	1	0	4	329	12.2 ‡	3.3	31.1
Sedgwick	69	60	52	61	62	304	39,545	7.7	6.8	8.6
Seward	0	2	0	4	3	9	2,393	3.8 ‡	1.7	7.1
Shawnee	25	16	17	10	15	83	12,203	6.8	5.4	8.4
Sheridan	0	0	0	1	1	2	137	n/a	n/a	n/a
Sherman	0	0	1	1	0	2	380	n/a	n/a	n/a
Smith	0	0	0	1	0	1	164	n/a	n/a	n/a
Stafford	0	0	0	0	0	0	224	0.0	0.0	0.0
Stanton	0	0	0	0	0	0	158	0.0	0.0	0.0
Stevens	0	0	0	1	0	1	440	n/a	n/a	n/a
Sumner	2	1	3	2	2	10	1,409	7.1 ‡	3.4	13.1
Thomas	3	0	0	0	0	3	538	n/a	n/a	n/a
Trego	0	0	0	0	0	0	142	0.0	0.0	0.0
Wabaunsee	0	0	1	0	0	1	454	n/a	n/a	n/a
Wallace	0	0	0	0	0	0	84	0.0	0.0	0.0
Washington	0	0	0	0	1	1	334	n/a	n/a	n/a
Wichita	0	0	0	1	0	1	144	n/a	n/a	n/a
Wilson	1	2	1	0	2	6	590	10.2 ‡	3.7	22.1
Woodson	0	1	0	0	0	1	175	n/a	n/a	n/a
Wyandotte	19	23	20	24	18	104	13,793	7.5	6.1	9.0
n.s.	-	-	0	0	0	0	2	n/a	n/a	n/a
Peer Group										
Frontier	7	4	9	13	5	38	6,176	6.2	4.4	8.4
Rural	27	20	23	18	18	106	14,804	7.2	5.8	8.5
Densely -Settled Rural	43	47	52	52	38	232	32,810	7.1	6.2	8.0
Semi-Urban	58	44	34	37	48	221	34,138	6.5	5.6	7.3
Urban	155	138	129	134	139	695	112,634	6.2	5.7	6.6

†Rate per 1,000 live births.

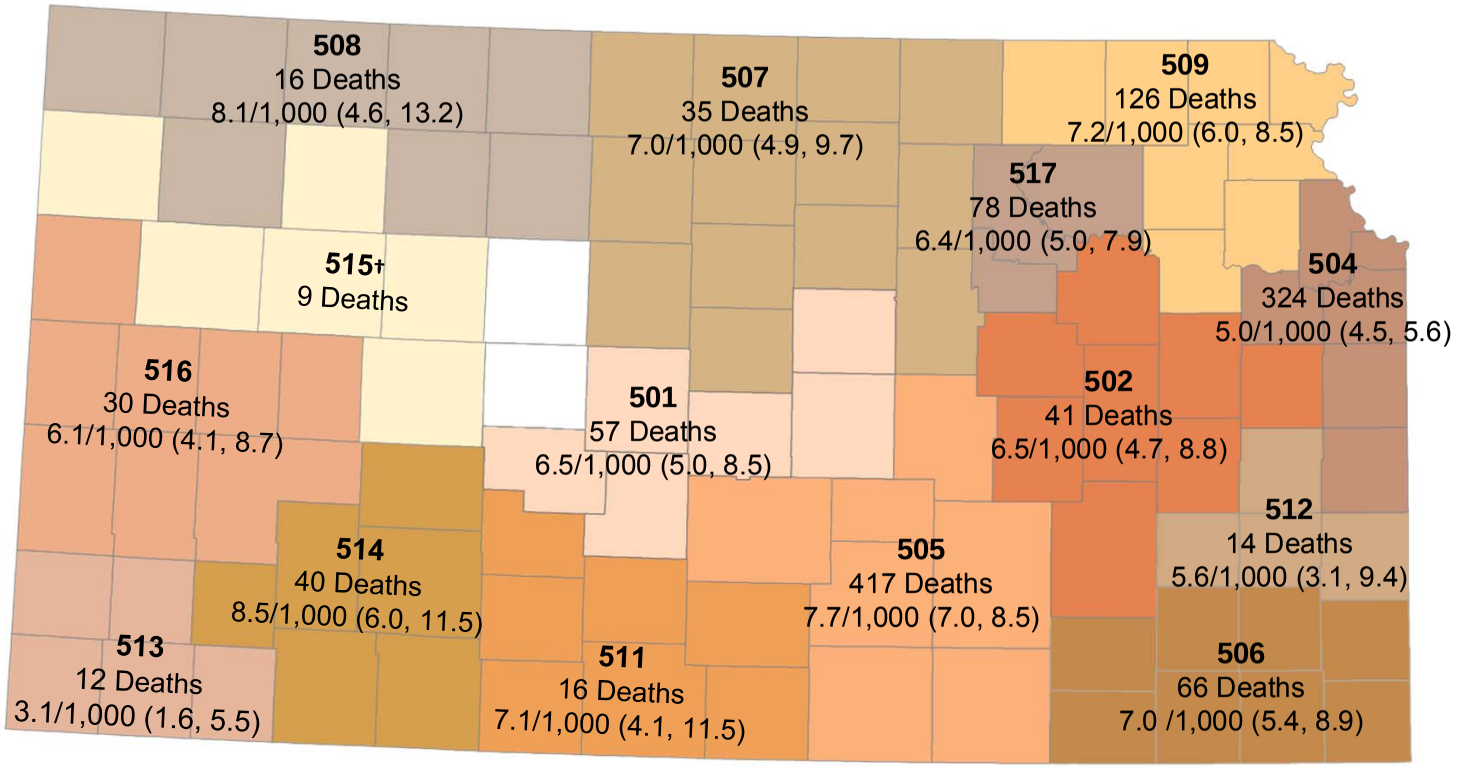
‡Rate has a relative standard error greater than 30, should be used with caution since it doesn't meet the standard of reliability.

n/a = Rates with an relative standard error greater than 50% have been suppressed.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 5
Infant Deaths and Mortality (IM) Rates* with 95% Confidence Intervals
by Public Health Regions, 2009-2013



Kansas 5 Yr. IM Rate, 6.4/1,000 (5.2, 7.8)

Kansas Public Health Regions

501 - Central Kansas	502 - EC Coalition	504 - KC Metro
505 - KS SC Metro	506 - Lower 8 of SE KS	507 - NC KS Pub Health Initiative
508 - Northwest BT Region	509 - Northeast Corner	511 - SC Coalition
512 – SEK	513 - SW KS Health Initiative	514 - SW Surveillance
515 - WC Pub Health Initiative	516 - Western Pyramid	517 – Wildcat

*Rate per 1,000 live births
†Numbers too small to calculate rates (Relative Standard Error >= 30), see methodology section
Residence data
Source: Bureau of Epidemiology and Public Health Informatics, Kansas Department of Health and Environment

Table 5
Infant Deaths by Cause of Death by Period of Death
Kansas, 2009-2013

Cause of Death (ICD-10 Code)	Age-Group of Infant						
	Under 1 Day	1-6 Days	Hebdomadal Deaths (under 7 days)	7-27 Days	Neonatal Deaths (under 28 days)	Post-Neonatal Deaths (28-364 days)	Under 1 Year
All Causes	557	133	690	152	842	450	1,292
Infectious and Parasitic Diseases (A00-B99)	0	0	0	2	2	18	20
Other Diseases and Disorders (C00-O99)	7	11	18	13	31	86	117
Certain Conditions Originating in the Perinatal Period (P00-P96)	420	71	491	66	557	10	567
Maternal Factors & Complications of Pregnancy, Labor and Delivery (P00-P04)	119	13	132	3	135	1	136
Disorders rel. to Short Gestation & Low Birth Weight (P07)	242	5	247	2	249	2	251
Birth Trauma (P10-P15)	0	0	0	0	0	0	0
Hypoxia and Birth Asphyxia (P20-P21)	5	3	8	1	9	0	9
Respiratory Distress of Newborn (P22)	4	5	9	1	10	1	11
Congenital Pneumonia (P23)	0	0	0	7	7	0	7
Other Respiratory Conditions of Newborn (P24-P28)	13	5	18	6	24	1	25
Bacterial Sepsis of Newborn (P36)	4	9	13	4	17	0	17
Omphalitis of Newborn w/wo Mild Hemorrhage (P38)	0	0	0	0	0	0	0
Fetal and Neonatal Hemorrhage (P50-P61)	3	10	13	11	24	0	24
Other Perinatal Conditions (P05 - P059, P08 -P089, P29 -P299, P35 -P359, P37 -P379, P39 -P399, P70 - P969)	30	21	51	31	82	5	87
Congenital Anomalies (Q00-Q99)	125	45	170	52	222	85	307
Symptoms and Abnormal Findings (R00-R99)	3	3	6	13	19	175	194
Sudden Infant Death Syndrome (R95)	0	3	3	6	9	129	138
Other Symptoms and Abnormal Findings (R00-R94, R96-R98)	0	0	0	0	0	1	1
Other Ill-defined and unspecified causes of mortality (R99)	3	0	3	7	10	45	55
Accidental suffocation and strangulation in bed (W75)	0	1	1	4	5	26	31
External Causes of Mortality (V01-W74,W76-Y89) excluding Suffocation in Bed (W75)	2	2	4	2	6	50	56
Sudden Unexpected Infant Deaths (SUID) (R95, R99, W75)	3	4	7	17	24	200	224

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 6
Infant Deaths by County of Residence
by Period of Death, Kansas, 2009-2013

County of Residence	Hebdomadal Deaths (under 7 days)	Neonatal Deaths (under 28 days)	Post-Neonatal Deaths (28-364 days)	Total Infant Deaths (under 1 year)
Kansas	690	842	450	1,292
Allen	3	3	1	4
Anderson	3	3	0	3
Atchison	5	5	4	9
Barber	0	0	0	0
Barton	8	9	4	13
Bourbon	1	5	1	6
Brown	3	3	2	5
Butler	11	13	10	23
Chase	0	0	0	0
Chautauqua	0	2	1	3
Cherokee	2	3	3	6
Cheyenne	2	2	0	2
Clark	1	1	0	1
Clay	3	3	4	7
Cloud	1	2	1	3
Coffey	3	3	0	3
Comanche	0	0	0	0
Cowley	9	10	8	18
Crawford	3	3	9	12
Decatur	0	1	0	1
Dickinson	5	5	5	10
Doniphan	0	0	0	0
Douglas	15	15	2	17
Edwards	3	3	0	3
Elk	1	1	1	2
Ellis	5	6	4	10
Ellsworth	1	1	0	1
Finney	12	14	9	23
Ford	15	18	11	29
Franklin	2	5	3	8
Geary	15	20	17	37
Gove	0	0	1	1
Graham	0	1	1	2
Grant	2	2	0	2
Gray	1	2	2	4
Greeley	0	0	0	0
Greenwood	1	1	1	2
Hamilton	0	0	0	0
Harper	2	2	2	4
Harvey	7	10	6	16
Haskell	3	4	1	5
Hodgeman	0	0	0	0
Jackson	2	2	3	5
Jefferson	6	6	5	11
Jewell	0	0	0	0
Johnson	111	126	47	173
Kearny	1	1	1	2
Kingman	1	1	1	2
Kiowa	0	0	3	3
Labette	11	11	3	14
Lane	0	0	0	0
Leavenworth	12	13	6	19
Lincoln	0	0	0	0
Linn	1	1	1	2
Logan	2	2	0	2

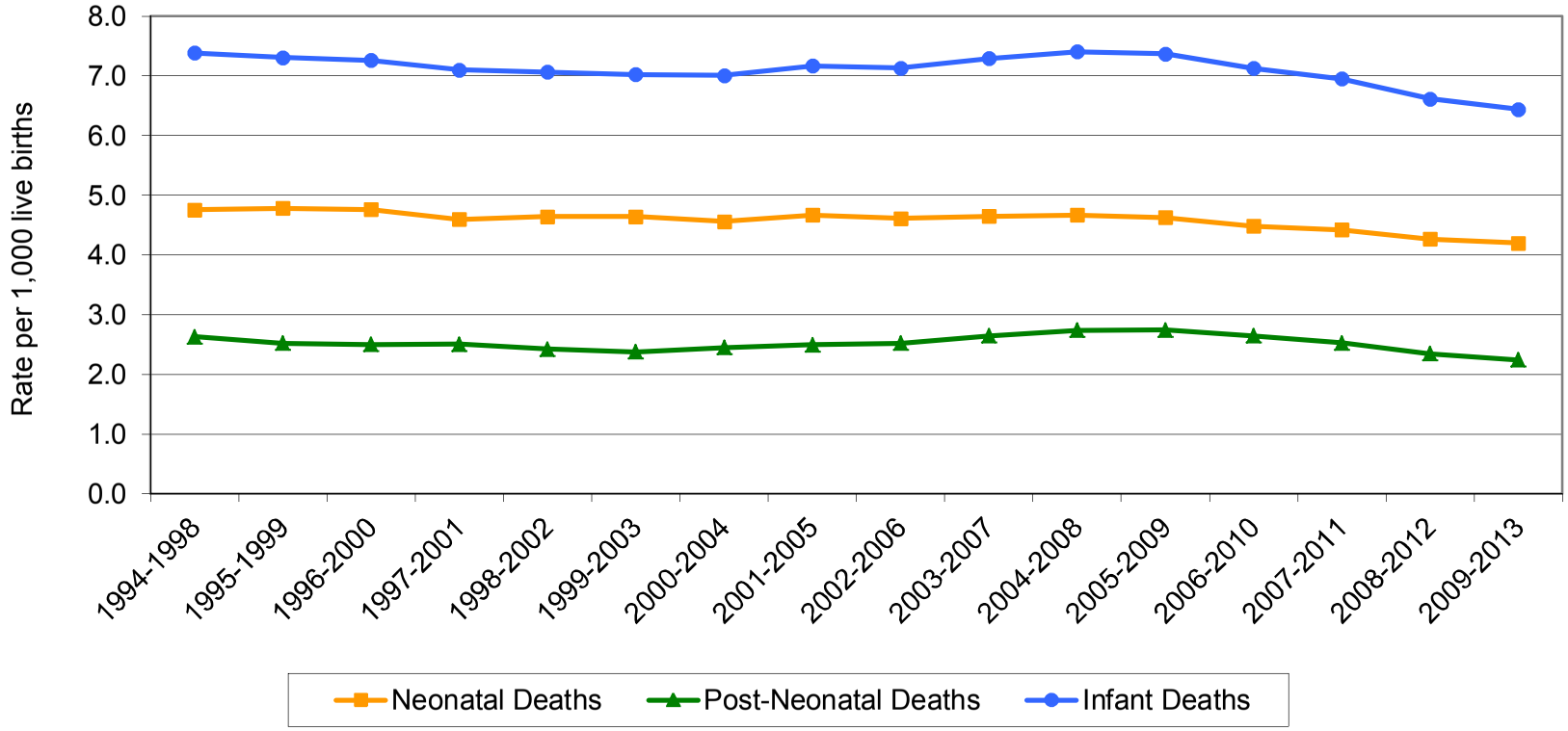
Table 6
Infant Deaths by County of Residence
by Period of Death, Kansas, 2009-2013

County of Residence	Hebdomadal Deaths (under 7 days)	Neonatal Deaths (under 28 days)	Post-Neonatal Deaths (28-364 days)	Total Infant Deaths (under 1 year)
Lyon	9	13	8	21
McPherson	6	12	2	14
Marion	7	8	0	8
Marshall	5	5	1	6
Meade	0	1	0	1
Miami	3	4	5	9
Mitchell	2	2	0	2
Montgomery	3	3	6	9
Morris	1	1	0	1
Morton	0	0	0	0
Nemaha	6	6	1	7
Neosho	5	7	7	14
Ness	1	1	1	2
Norton	2	2	1	3
Osage	2	2	3	5
Osborne	1	2	1	3
Ottawa	1	1	0	1
Pawnee	1	2	1	3
Phillips	1	2	0	2
Pottawatomie	2	4	3	7
Pratt	3	4	0	4
Rawlins	1	1	1	2
Reno	16	21	17	38
Republic	1	1	0	1
Rice	0	0	2	2
Riley	21	24	10	34
Rooks	1	1	0	1
Rush	0	1	0	1
Russell	2	5	0	5
Saline	13	15	10	25
Scott	2	2	2	4
Sedgwick	158	198	106	304
Seward	7	8	1	9
Shawnee	47	54	29	83
Sheridan	2	2	0	2
Sherman	2	2	0	2
Smith	1	1	0	1
Stafford	0	0	0	0
Stanton	0	0	0	0
Stevens	0	0	1	1
Sumner	2	4	6	10
Thomas	1	2	1	3
Trego	0	0	0	0
Wabaunsee	1	1	0	1
Wallace	0	0	0	0
Washington	0	1	0	1
Wichita	1	1	0	1
Wilson	3	3	3	6
Woodson.	1	1	0	1
Wyandotte	51	67	37	104

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 6
Five Year Average Infant Mortality Rates
by Period of Death
Kansas, 1994-2013



Residence data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 7
Stillbirths by Cause of Death by Weeks Gestation
Kansas, 2009-2013

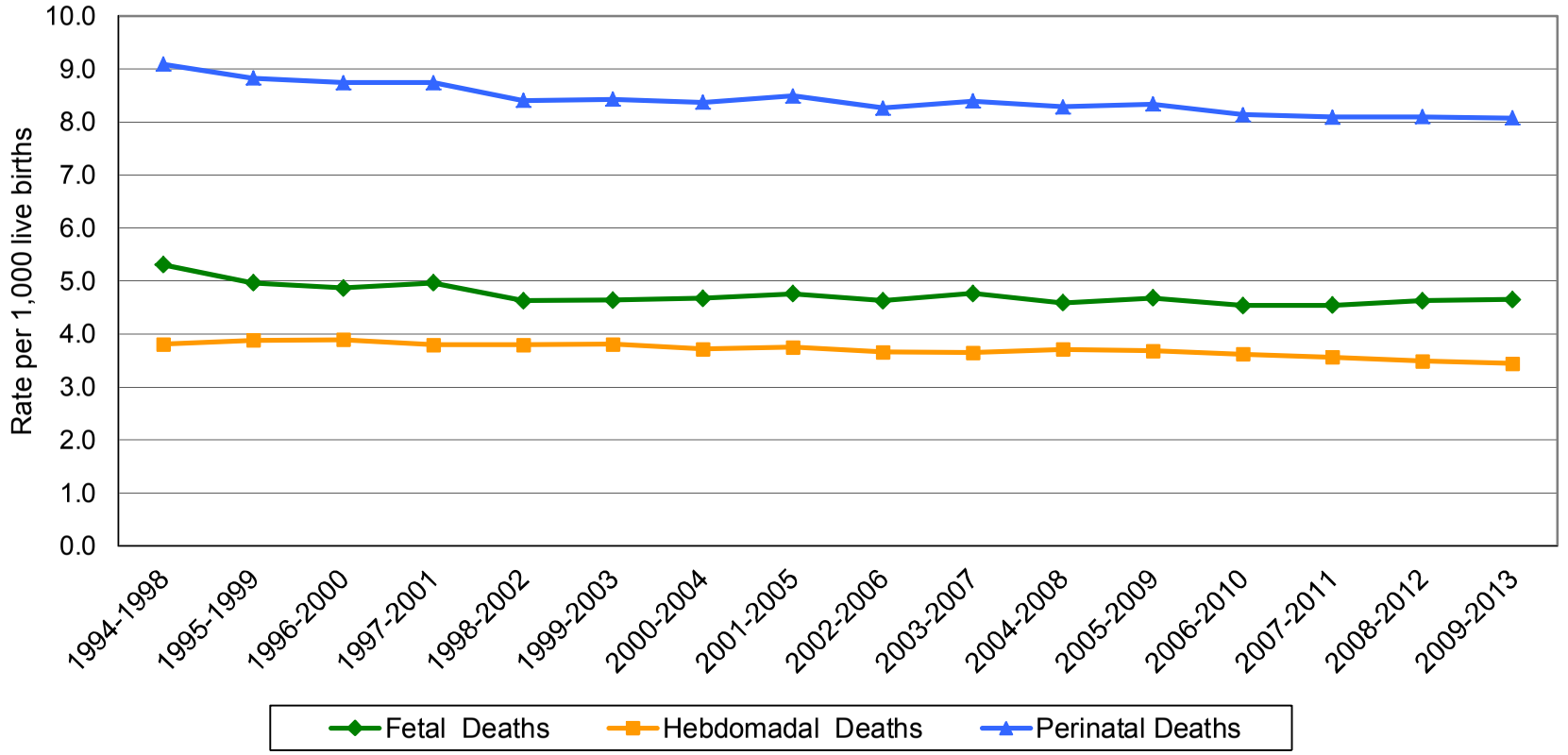
Cause of Death (ICD-10 Code)	Total Stillbirths	Weeks Gestation				
		Under 20	20-31	32-41	42 & Over	ns *
All Causes	937	9	466	453	2	7
Certain Conditions Originating in the Perinatal Period (P00-P96)	550	6	291	248	1	4
Fetus Affected by Maternal Conditions (P00)	80	0	43	37	0	0
Fetus Affected by Maternal Complications of Pregnancy (P01)	77	1	60	15	0	1
Fetus affected by Complications of Placenta, Cord & Membrane (P02)	278	4	124	147	0	3
Fetus Affected by Complications of Labor and Delivery (P03)	7	0	4	2	1	0
Fetus Affected by Maternal Use of Tobacco, Alcohol, and Drugs of Abuse (P04)	9	0	7	2	0	0
Other Perinatal Conditions (P04 - P05, P08-P15, P22-P28,P35 -P39, P55, P57 -P94, P96)	63	1	22	40	0	0
Disorders related to Short Gestation & Low Birth Weight (P07)	33	0	30	3	0	0
Hypoxia and Birth Asphyxia (P20-P21)	2	0	1	1	0	0
Cardiovascular Disorders (P24-P28)	1	0	0	1	0	0
Unspecified Cause (P95)	267	2	120	142	0	3
Congenital Anomalies (Q00-Q99)	109	1	45	62	1	0
All other Causes	11	0	10	1	0	0

*ns = Not Stated.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Figure 7
Five Year Average Perinatal Period III Mortality Rates
by Period of Death
Kansas, 1994-2013



Residence data
Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 8
Linked Infant Deaths
by Cause of Death by Gestational Age
Kansas, 2009-2013

Cause of Death	Total Deaths	Very Premature <32 weeks		Moderate Premature 32-33 weeks		Late Preterm 34-36 weeks		Total Preterm <37 weeks		Early Term 37-38 weeks		Term >=39 weeks		ns*
		N	%	N	%	N	%	N	%	N	%	N	%	
Kansas	1,282	590	46.4	61	4.8	132	10.4	783	61.6	208	16.4	281	22.1	10
Infectious and Parasitic Diseases (A00-B99)	20	8	40.0	0	0.0	2	10.0	10	50.0	3	15.0	7	35.0	0
Other Diseases and Disorders (C00-O99)	116	42	36.2	5	4.3	7	6.0	54	46.6	20	17.2	42	36.2	0
Maternal Factors & Compl of Pregnancy, Labor and Delivery (P00-P04)	136	117	86.7	4	3.0	5	3.7	126	93.3	3	2.2	6	4.4	1
Disorders rel. to Short Gestation & Low Birth Weight (P07)	251	247	99.2	1	0.4	0	0.0	248	99.6	1	0.4	0	0.0	2
Hypoxia and Birth Asphyxia (P20-P21)	9	3	33.3	1	11.1	2	22.2	6	66.7	2	22.2	1	11.1	0
Respiratory Distress of Newborn (P22)	11	9	81.8	2	18.2	0	0.0	11	100.0	0	0.0	0	0.0	0
Congenital Pneumonia (P23)	7	4	57.1	1	14.3	1	14.3	6	85.7	0	0.0	1	14.3	0
Other Respiratory Conditions of Newborn (P24-P28)	25	18	72.0	2	8.0	1	4.0	21	84.0	4	16.0	0	0.0	0
Bacterial Sepsis of Newborn (P36)	17	11	64.7	1	5.9	3	17.6	15	88.2	2	11.8	0	0.0	0
Hemorrhagic and Hematolog Disorders of Fetus and Newborn (P50-P61)	24	16	69.6	1	4.3	0	0.0	17	73.9	4	17.4	2	8.7	1
Other Perinatal Conditions (P05, P08, P29, P35, P37, P39, P70-P96)	86	57	66.3	8	9.3	7	8.1	72	83.7	4	4.7	10	11.6	0
Congenital Anomalies (Q00-Q99)	305	46	15.2	30	9.9	76	25.1	152	50.2	78	25.7	73	24.1	2
Other Symptoms and Abnormal Findings (R00-R94, R96-R98)	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0
Sudden Infant Death Syndrome (R95)	136	6	4.4	3	2.2	16	11.8	25	18.4	39	28.7	72	52.9	0
Other Ill-Defined and Unspecified Causes of Mortality (R99)	53	3	5.8	0	0.0	5	9.6	8	15.4	16	30.8	28	53.8	1
Accidental Suffocation in Bed (W75)	31	0	0.0	0	0.0	2	6.5	2	6.5	13	41.9	16	51.6	0
External Causes of Mortality (V01-Y89), excluding sleep related deaths (W75)	54	3	5.9	2	3.9	5	9.8	10	19.6	19	37.3	22	43.1	3

*ns = Not stated.

Unknowns are excluded in calculating percents.

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 9
Linked Infant Deaths by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2009-2013

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	Unknown
Total	1,282	747	188	11	23	227	65	8	13
Sex									
Female	570	322	86	3	14	107	29	3	6
Male	712	425	102	8	9	120	36	5	7
Plurality									
Single	1,104	636	153	9	22	209	57	7	11
Twin	160	96	32	2	1	18	8	1	2
Triplets or more	18	15	3	-	-	-	-	-	-
Plural	178	111	35	2	1	18	8	1	2
Not stated	-	-	-	-	-	-	-	-	-
Birth Order									
1	504	309	67	4	10	86	20	3	5
2	349	198	45	5	8	60	25	1	7
3	209	120	39	1	2	36	10	1	-
4	121	66	20	-	3	22	8	1	1
5 or more	99	54	17	1	-	23	2	2	-
Not stated	-	-	-	-	-	-	-	-	-
Birthweight									
Less than 2,500 grams	803	449	129	4	15	156	38	3	9
Less than 500 grams	318	156	77	3	4	54	19	1	4
500-1499 grams	279	163	35	-	4	66	7	1	3
1,500-2,499 grams	206	130	17	1	7	36	12	1	2
2,500 grams or more	473	293	59	6	8	71	27	5	4
Not stated	6	5	-	1	-	-	-	-	-
Gestational age									
Premature (< 37 weeks)	783	438	128	4	13	152	36	3	9
Very Premature (< 32 wks)	590	313	112	4	9	115	27	3	7
Moderate Premature (32-33 wks)	61	43	4	-	1	9	3	-	1
Late Premature (34-36 wks)	132	82	12	-	3	28	6	-	1
Early Term (37-38 weeks)	208	126	30	3	3	32	12	-	2
Term (39-45 weeks)	281	175	30	4	7	41	17	5	2
Not stated	10	8	-	-	-	2	-	-	-
Mother's age									
Under 20 years	146	79	27	1	3	28	6	1	1
20-24 years	418	215	66	4	2	95	28	1	7
25-29 years	347	222	49	3	5	46	18	3	1
30-34 years	231	149	28	1	8	29	11	3	2
35-39 years	110	64	16	-	5	22	2	-	1
40-60 years	26	14	2	2	-	7	-	-	1
Not stated	4	4	-	-	-	-	-	-	-
Marital Status									
Married	627	441	33	3	20	94	28	3	5
Unmarried	644	298	155	8	3	131	37	5	7
Not stated	11	8	-	-	-	2	-	-	1

Table 9
Linked Infant Deaths by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2009-2013

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	Unknown
Payor									
Medicaid	517	263	113	4	8	85	32	5	7
Private Insurance	493	349	37	5	10	66	21	1	4
Self Pay	126	51	15	-	3	50	4	2	1
Ind Hlt Serv	-	-	-	-	-	-	-	-	-
Champus/Tricare	54	33	9	-	1	7	4	-	-
Other Government	36	19	7	1	-	6	3	-	-
Other	22	9	6	-	-	7	-	-	-
Not stated	34	23	1	1	1	6	1	-	1
Mother's education*									
8th Grade or Less	38	8	3	-	3	22	-	1	1
9-12 Grade, No Diploma	67	29	10	1	3	19	4	1	-
H.S. or GED	170	86	37	4	4	28	7	1	3
Some College, No Degree	150	96	23	-	2	16	12	1	-
Associate Degree	70	50	13	-	1	4	2	-	-
Bachelor's Degree	148	120	6	1	-	13	5	2	1
Master's Degree	47	42	1	-	3	-	1	-	-
Doctorate	11	9	-	-	2	-	-	-	-
Not stated	13	9	2	-	-	2	-	-	-
*Mother's Over 24 years									
Prenatal Care									
None	79	32	26	-	1	19	1	-	-
Month 1	47	26	9	1	2	8	-	-	1
Month 2	341	217	45	1	6	45	23	1	3
Month 3	421	267	48	4	5	67	23	4	3
First Trimester	809	510	102	6	13	120	46	5	7
Month 4	119	61	20	1	2	26	6	2	1
Month 5	73	40	10	-	3	15	2	-	3
Month 6	32	15	4	1	1	8	2	-	1
Second Trimester	224	116	34	2	6	49	10	2	5
Month 7	23	12	4	-	1	4	2	-	-
Month 8	13	7	2	1	-	3	-	-	-
Month 9	5	3	-	-	-	2	-	-	-
Third Trimester	41	22	6	1	1	9	2	-	-
Not Stated	129	67	20	2	2	30	6	1	1
Adequecy of Prenatal Care									
Adequate Plus	554	350	83	-	7	81	27	3	3
Adequate	278	168	29	5	7	44	18	2	5
Intermediate	50	25	7	-	1	13	3	1	-
Inadequate	227	110	44	1	6	53	8	1	4
Not stated	173	94	25	5	2	36	9	1	1
Smoking during pregnancy									
Ever Smoked During Pregnancy	292	193	49	3	-	21	22	2	2
Smoking Status Known	1,245	723	182	11	22	221	65	8	13

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Table 10
Live Births by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2009-2013

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	Unknown
Total	200,564	143,669	13,549	1,043	5,856	31,915	3,259	1,140	133
Sex									
Female	98,025	70,124	6,678	552	2,831	15,618	1,603	558	61
Male	102,539	73,545	6,871	491	3,025	16,297	1,656	582	72
Plurality									
Single	193,959	138,629	13,022	1,003	5,675	31,237	3,157	1,109	127
Twin	6,319	4,808	518	37	167	656	101	30	2
Triplets or more	246	206	6	3	12	18	1	-	-
Plural	6,565	5,014	524	40	179	674	102	30	2
Not stated	40	26	3	-	2	4	-	1	4
Birth Order									
1	75,293	55,715	4,805	332	2,542	9,962	1,408	477	52
2	62,784	46,329	3,850	322	2,061	8,915	932	338	37
3	36,270	25,275	2,514	206	781	6,781	507	185	21
4	15,747	10,033	1,279	95	300	3,719	237	75	9
5 or more	10,469	6,316	1,101	88	172	2,538	175	65	14
Not stated	1	1	-	-	-	-	-	-	-
Birthweight									
Less than 2,500 grams	14,371	9,559	1,796	81	501	2,053	278	95	8
Less than 500 grams	342	184	91	1	4	52	5	2	3
500-1499 grams	2,294	1,471	332	15	74	339	46	15	2
1,500-2,499 grams	11,735	7,904	1,373	65	423	1,662	227	78	3
2,500 grams or more	186,157	134,093	11,751	962	5,354	29,858	2,981	1,045	113
Not stated	36	17	2	-	1	4	-	-	12
Gestational age									
Premature (< 37 weeks)	18,013	12,567	1,769	115	520	2,577	368	90	7
Very Premature (< 32 wks)	3,015	1,940	446	15	91	444	57	18	4
Moderate Premature (32-33 wks)	2,225	1,562	221	15	52	327	42	6	-
Late Premature (34-36 wks)	12,773	9,065	1,102	85	377	1,806	269	66	3
Early Term (37-38 weeks)	50,313	35,864	3,454	309	1,525	7,963	894	279	25
Term (39-45 weeks)	132,032	95,133	8,302	617	3,808	21,323	1,994	770	85
Not stated	206	105	24	2	3	52	3	1	16
Mother's age									
Under 20 years	17,917	10,140	2,000	121	193	4,817	581	58	7
20-24 years	52,062	35,293	4,888	376	671	9,434	1,140	233	27
25-29 years	62,840	47,507	3,503	297	1,861	8,384	855	398	35
30-34 years	45,856	35,116	2,095	167	1,957	5,749	463	273	36
35-39 years	17,980	12,945	862	69	947	2,828	181	133	15
40-60 years	3,892	2,662	199	13	226	701	39	45	7
Not stated	17	6	2	-	1	2	-	-	6
Marital Status									
Married	125,860	99,407	3,744	378	4,977	14,939	1,389	948	78
Unmarried	74,420	44,052	9,793	662	874	16,945	1,868	189	37
Not stated	284	210	12	3	5	31	2	3	18

Table 10
Live Births by Birth Characteristics
by Selected Population Groups of the Mother
Kansas, 2009-2013

Characteristics	All races and origins	White NH	Black NH	American Indian or Alaska Native NH	Asian or Pacific Islander	Hispanic	Multi Race	Other NH	Unknown
Payor									
Medicaid	63,514	40,136	8,416	573	945	11,424	1,634	347	39
Private Insurance	102,398	85,509	2,880	290	3,950	8,243	1,099	397	30
Self Pay	15,341	5,247	646	35	448	8,623	108	207	27
Ind Hlt Serv	139	38	7	66	2	16	9	1	-
Champus/Tricare	10,704	7,874	944	37	291	1,190	303	62	3
Other Government	3,412	2,021	362	18	62	855	64	28	2
Other	2,637	1,323	193	9	101	915	22	73	1
Not stated	2,419	1,521	101	15	57	649	20	25	31
Mother's education*									
8th Grade or Less	4,831	789	88	6	151	3,657	13	124	3
9-12 Grade, No Diploma	8,589	3,309	662	65	224	4,164	94	68	3
H.S. or GED	21,112	13,841	1,851	140	765	4,046	313	150	6
Some College, No Degree	26,291	20,254	2,066	170	644	2,563	469	117	8
Associate Degree	12,385	10,289	667	57	259	898	168	40	7
Bachelor's Degree	38,521	33,922	834	80	1,551	1,587	318	208	21
Master's Degree	14,228	12,170	358	25	995	457	121	96	6
Doctorate	3,779	3,146	86	1	368	110	36	31	1
Not stated	832	510	47	2	34	180	6	15	38
*Mother's Over 24 years									
Prenatal Care									
None	1,892	826	324	16	62	595	27	28	14
Month 1	5,263	3,810	296	33	157	842	85	38	2
Month 2	65,034	50,699	3,489	269	2,020	7,359	902	272	24
Month 3	80,192	60,268	4,688	395	2,228	10,907	1,331	326	49
First Trimester	150,489	114,777	8,473	697	4,405	19,108	2,318	636	75
Month 4	20,861	13,158	1,781	127	585	4,674	389	134	13
Month 5	9,988	5,658	986	75	285	2,698	191	87	8
Month 6	5,546	3,004	628	39	171	1,532	128	40	4
Second Trimester	36,395	21,820	3,395	241	1,041	8,904	708	261	25
Month 7	3,531	1,855	393	36	99	1,021	86	37	4
Month 8	2,223	1,144	229	23	80	677	46	22	2
Month 9	1,024	531	99	7	31	325	22	8	1
Third Trimester	6,778	3,530	721	66	210	2,023	154	67	7
Not Stated	5,146	2,716	636	23	138	1,285	52	148	12
Adequecy of Prenatal Care									
Adequate Plus	60,413	46,693	3,521	305	1,651	7,011	1,023	186	23
Adequate	96,144	72,489	5,431	408	2,933	12,977	1,462	399	45
Intermediate	11,828	7,037	1,029	85	338	3,011	160	152	16
Inadequate	25,189	13,512	2,739	206	764	7,188	519	228	33
Not stated	6,990	3,938	829	39	170	1,728	95	175	16
Smoking during pregnancy									
Ever Smoked During Pregnancy	28,185	23,138	2,171	293	159	1,547	827	41	9
Smoking Status Known	199,022	142,510	13,449	1,032	5,830	31,753	3,215	1,131	102

Residence data

Source: Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment

Technical Notes

Data for 2005 and years following are based on Kansas implementation of the 2003 revision of the U.S. Standard Certificates of Live Birth, Death, and Stillbirth. Data for prior years is based on the 1989 revision of the U.S. Standard Certificate of Live Birth, Death, and Stillbirth.

Data analysis involving the 2005 Kansas Certificate of Live Birth is affected in several ways:

- Changes in both question wording and sources for the information collected make it inappropriate to evaluate trends across 2004 and 2005 in some variables such as month prenatal care began and education level

- Calculating Month Prenatal Care Began – prior to 2005 – the mother was asked for the month prenatal care began. Starting in 2005, the dates used to calculate the month prenatal care began included the first day of the last menses before pregnancy and the date of the first prenatal visit. This change makes rates calculated after 2004 incompatible with earlier years. Such comparisons are inappropriate.

- KDHE publishes data on resident births and deaths. If the event occurs out of state and the state is not using the 2003 revision of the birth certificate, missing data may result. This is an important factor in border counties.

- KDHE excludes unknowns from the denominator for all calculations that result in percentage rates involving birth data. Other states choose to include unknowns in the denominator. The Kansas method provides a more accurate representation of the rates.

- The 2003 revision process resulted in recommendations that the prenatal care information be gathered from the prenatal care or medical records, whereas the 1989 revision did not recommend a source for these data. In the case of premature births, sometimes these records aren't available when the infant is delivered.

- Infant mortality rates reported by NCHS may vary slightly from rates reported by KDHE. NCHS rates are based on data reported to it by all states. Some of those out-of-state occurrence infant deaths may not be reported to KDHE in time for inclusion in the respective year's *Annual Summary of Vital Statistics* or subsequent reports.

- Percentages may not add to 100 percent due to rounding.

Population Groups

This report uses the concept of reporting race and Hispanic origin combined into distinct categories of population groups. This was done to preserve the self-reported information on race and origin reported in the expanded categories. The use of population groups assures a better uniformity of the numerators and denominators in rate calculations.

Because of different tabulation methods, totals for population groups may not equal those tabulated by either race or Hispanic origin individually. Rates calculated exclusively on Hispanic origin treat unknowns differently.

The aggregation grid for population groups is listed on page 169 of the *Annual Summary of Vital Statistics, 2013*. Application of this grid assures that every combination of race and origin is assigned to a population group. In instances where the Hispanic origin of an individual is unknown, the person is assigned to a population group solely on the basis of race and is considered non-Hispanic.

Peer Groups

For various demographic studies, it is useful to consider groups of counties with similar characteristics. “Peer Groups” of counties, as used in this summary, are defined as those with similar population density based on a method derived by the KDHE Bureau of Community Health Systems. (See Appendix 1 for county tables indicating population density peer group membership before and after the 2010 U.S. Census.)

Frontier counties are defined as those with less than 6.0 persons per square mile, Rural counties as those with 6.0 - 19.9 persons per square mile, Densely-Settled Rural counties as those with 20.0 - 39.9 persons per square mile, Semi-Urban counties as those with 40.0 - 149.9 persons per square mile, and Urban counties as those with 150.0 or more persons per square mile. These designations should *not* be confused with the USCB definitions of urban and rural areas.

The KDHE Bureau of Epidemiology and Public Health Informatics applies these definitions, updating the groups with every decennial census. Based on the 2010 U.S. Census, eight Kansas counties changed peer groups. In order to facilitate a time series comparison, Peer-Group statistics for prior years are based on the Peer-Group in effect during that decade [2]. Sources for calculation of population densities are population figures from the 2010 U.S. Census and land areas from the 2010 U.S. Census.

APPENDIX 1
Kansas County Codes and Groupings

County Name	FIPS Code	Abbreviation	Population Density Peer Group (2010)	Population Density Peer Group (2000)
Allen	001	AL	Densely-Settled Rural	Densely-Settled Rural
Anderson	003	AN	Rural	Rural
Atchison	005	AT	Densely-Settled Rural	Densely-Settled Rural
Barber	007	BA	Frontier	Frontier
Barton	009	BT	Densely-Settled Rural	Densely-Settled Rural
Bourbon	011	BB	Densely-Settled Rural	Densely-Settled Rural
Brown	013	BR	Rural	Rural
Butler	015	BU	Semi-Urban	Semi-Urban
Chase	017	CS	Frontier	Frontier
Chautauqua	019	CQ	Frontier	Rural
Cherokee	021	CK	Densely-Settled Rural	Densely-Settled Rural
Cheyenne	023	CN	Frontier	Frontier
Clark	025	CA	Frontier	Frontier
Clay	027	CY	Rural	Rural
Cloud	029	CD	Rural	Rural
Coffey	031	CF	Rural	Rural
Comanche	033	CM	Frontier	Frontier
Cowley	035	CL	Densely-Settled Rural	Densely-Settled Rural
Crawford	037	CR	Semi-Urban	Semi-Urban
Decatur	039	DC	Frontier	Frontier
Dickinson	041	DK	Densely-Settled Rural	Densely-Settled Rural
Doniphan	043	DP	Densely-Settled Rural	Densely-Settled Rural
Douglas	045	DG	Urban	Urban
Edwards	047	ED	Frontier	Frontier
Elk	049	EK	Frontier	Frontier
Ellis	051	EL	Densely-Settled Rural	Densely-Settled Rural
Ellsworth	053	EW	Rural	Rural
Finney	055	FI	Densely-Settled Rural	Densely-Settled Rural
Ford	057	FO	Densely-Settled Rural	Densely-Settled Rural
Franklin	059	FR	Semi-Urban	Semi-Urban
Geary	061	GE	Semi-Urban	Semi-Urban
Gove	063	GO	Frontier	Frontier
Graham	065	GH	Frontier	Frontier
Grant	067	GT	Rural	Rural
Gray	069	GY	Rural	Rural
Greeley	071	GL	Frontier	Frontier
Greenwood	073	GW	Frontier	Rural
Hamilton	075	HM	Frontier	Frontier
Harper	077	HP	Rural	Rural
Harvey	079	HV	Semi-Urban	Semi-Urban
Haskell	081	HS	Rural	Rural
Hodgeman	083	HG	Frontier	Frontier
Jackson	085	JA	Densely-Settled Rural	Rural
Jefferson	087	JF	Densely-Settled Rural	Densely-Settled Rural
Jewell	089	JW	Frontier	Frontier
Johnson	091	JO	Urban	Urban
Kearny	093	KE	Frontier	Frontier
Kingman	095	KM	Rural	Rural
Kiowa	097	KW	Frontier	Frontier
Labette	099	LB	Densely-Settled Rural	Densely-Settled Rural
Lane	101	LE	Frontier	Frontier
Leavenworth	103	LV	Urban	Semi-Urban
Lincoln	105	LC	Frontier	Frontier
Linn	107	LN	Rural	Rural

County Name	FIPS Code	Abbreviation	Population Density Peer Group (2010)	Population Density Peer Group (2000)
Logan	109	LG	Frontier	Frontier
Lyon	111	LY	Densely-Settled Rural	Semi-Urban
McPherson	113	MP	Densely-Settled Rural	Densely-Settled Rural
Marion	115	MN	Rural	Rural
Marshall	117	MS	Rural	Rural
Meade	119	ME	Frontier	Frontier
Miami	121	MI	Semi-Urban	Semi-Urban
Mitchell	123	MC	Rural	Rural
Montgomery	125	MG	Semi-Urban	Semi-Urban
Morris	127	MR	Rural	Rural
Morton	129	MT	Frontier	Frontier
Nemaha	131	NM	Rural	Rural
Neosho	133	NO	Densely-Settled Rural	Densely-Settled Rural
Ness	135	NS	Frontier	Frontier
Norton	137	NT	Rural	Rural
Osage	139	OS	Densely-Settled Rural	Densely-Settled Rural
Osborne	141	OB	Frontier	Frontier
Ottawa	143	OT	Rural	Rural
Pawnee	145	PN	Rural	Rural
Phillips	147	PL	Rural	Rural
Pottawatomie	149	PT	Densely-Settled Rural	Densely-Settled Rural
Pratt	151	PR	Rural	Rural
Rawlins	153	RA	Frontier	Frontier
Reno	155	RN	Semi-Urban	Semi-Urban
Republic	157	RP	Rural	Rural
Rice	159	RC	Rural	Rural
Riley	161	RL	Semi-Urban	Semi-Urban
Rooks	163	RO	Frontier	Rural
Rush	165	RH	Frontier	Frontier
Russell	167	RS	Rural	Rural
Saline	169	SA	Semi-Urban	Semi-Urban
Scott	171	SC	Rural	Rural
Sedgwick	173	SG	Urban	Urban
Seward	175	SW	Densely-Settled Rural	Densely-Settled Rural
Shawnee	177	SN	Urban	Urban
Sheridan	179	SD	Frontier	Frontier
Sherman	181	SH	Frontier	Rural
Smith	183	SM	Frontier	Frontier
Stafford	185	SF	Frontier	Rural
Stanton	187	ST	Frontier	Frontier
Stevens	189	SV	Rural	Rural
Sumner	191	SU	Densely-Settled Rural	Densely-Settled Rural
Thomas	193	TH	Rural	Rural
Trego	195	TR	Frontier	Frontier
Wabaunsee	197	WB	Rural	Rural
Wallace	199	WA	Frontier	Frontier
Washington	201	WS	Rural	Rural
Wichita	203	WH	Frontier	Frontier
Wilson	205	WL	Rural	Rural
Woodson	207	WO	Rural	Rural
Wyandotte	209	WY	Urban	Urban

Kansas Department of Health and Environment
Office of Vital Statistics

CERTIFICATE OF LIVE BIRTH

115-

State File Number

1. CHILD'S NAME (First, Middle, Last, Suffix)	2. DATE OF BIRTH (Month, Day, Year)	3. TIME OF BIRTH M

4. SEX	5. BIRTH WEIGHT (Grams)	6. CITY, TOWN, OR LOCATION OF BIRTH	7. COUNTY OF BIRTH

8. PLACE OF BIRTH ☐ Hospital ☐ Freestanding Birthing Center ☐ Home Birth ☐ Clinic/Doctor's Office ☐ Other (Specify) _____	9. FACILITY NAME (If not institution, give street and number)

10. I CERTIFY THAT THE STATED INFORMATION CONCERNING THIS CHILD IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF. Certifier's Signature ➢ _____	11. DATE SIGNED (Month, Day, Year)	12. ATTENDANT'S NAME AND TITLE (Type) Name _____ ☐ M.D. ☐ D.O. ☐ C.N.M. ☐ Other Midwife ☐ Other (Specify) _____

13. Certifier's Name and Title (Type) Name _____ ☐ M.D. ☐ D.O. ☐ Hosp Adm. ☐ C.N.M. ☐ Other Midwife ☐ Other (Specify) _____	14. ATTENDANT'S MAILING ADDRESS (Street and Number or Rural Route, City, or Town, State, Zip Code)

15. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)	16. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE

17. DATE OF BIRTH (Month, Day, Year)	18. BIRTHPLACE (State, Territory, or Foreign Country)	19. PRESENT RESIDENCE-STATE

20. COUNTY	21. CITY, TOWN, OR LOCATION	22. STREET AND NUMBER OF PRESENT RESIDENCE

23. ZIP CODE	24. INSIDE CITY LIMITS? ☐ YES ☐ NO	25. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)

26. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)	27. DATE OF BIRTH (Month, Day, Year)	28. BIRTHPLACE (State, Territory, or Foreign Country)

29. PARENTS REQUEST SOCIAL SECURITY NUMBER ISSUANCE? ☐ YES ☐ NO	30. IMMUNIZATION REGISTRY I wish to enroll my child in the Immunization Registry ☐ YES ☐ NO

31. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➢ _____	32. DATE SIGNED (Month, Day, Year)	33 DATE FILED BY STATE REGISTRAR (Month, Day, Year) (Vital Statistics only)

CONFIDENTIAL INFORMATION FOR INTERNAL USE ONLY

34. IF HOME BIRTH, WAS DELIVERY PLANNED AT HOME? ☐ Yes ☐ No ☐ Unknown

35. MOTHER'S SOCIAL SECURITY NUMBER

36. FATHER'S SOCIAL SECURITY NUMBER

37a. WAS MOTHER EVER MARRIED? ☐ Yes ☐ No ☐ Unknown

37b. MOTHER MARRIED? (At birth, conception or any time between) ☐ Yes ☐ No ☐ Unknown

37c. IF NO, HAS PATERNITY ACKNOWLEDGMENT BEEN SIGNED? ☐ Yes ☐ No

37d. MOTHER REFUSES TO GIVE HUSBAND'S INFORMATION ☐ Yes ☐ No

38. WHAT IS THE PRIMARY LANGUAGE SPOKEN IN THE HOME? ☐ English ☐ Spanish ☐ Vietnamese ☐ German ☐ French ☐ Russian ☐ Ukrainian ☐ Mandarin ☐ Cantonese ☐ Sign Language ☐ Other (Specify) _____

39. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "No" box if the parent is not Spanish, Hispanic, or Latino.)

39a. MOTHER
- ☐ No, not Spanish/ Hispanic/Latina
- ☐ Yes, Mexican/Mexican American/Chicana
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/ Hispanic/Latina

(Specify)_____
- ☐ Unknown

39b. FATHER
- ☐ No, not Spanish/ Hispanic/Latino
- ☐ Yes, Mexican/Mexican American/Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/ Hispanic/Latino

(Specify)_____
- ☐ Unknown

40. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)

40a. MOTHER
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian (Specify) _____
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander (Specify) _____
- ☐ Other (Specify) _____
- ☐ Unknown

40b. FATHER
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian (Specify) _____
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander (Specify) _____
- ☐ Other (Specify) _____
- ☐ Unknown

41. ANCESTRY - What is the parents' ancestry or ethnic origin?- Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)

41a. MOTHER

41b. FATHER

42. OCCUPATION AND BUSINESS/INDUSTRY

	Occupation	Business/Industry (Do not give name of company.)
42a. MOTHER (Most recent)		
42b. FATHER (Usual)		
42c. MOTHER		
42d. FATHER		

43. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)

43a. MOTHER'S EDUCATION
- ☐ 8th grade or less
- ☐ 9th - 12th grade; no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA,AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☒ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)
- ☐ Unknown

43b. FATHER'S EDUCATION
- ☐ 8th grade or less
- ☐ 9th - 12th grade; no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA,AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)
- ☐ Unknown

44. PREVIOUS LIVE BIRTHS (Do not include this child.)

44a. Now living Number _____ ☐ None

44b. Now dead Number _____ ☐ None

45. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)

45a. Before 20 weeks Number _____ ☐ None

45b. 20 weeks & over Number _____ ☐ None

46. PRENATAL CARE? ☐ Yes ☐ No

47. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)

48. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)

49. PRENATAL VISITS-Total Number (If none, enter "0")

44c. DATE OF LAST LIVE BIRTH (Month, Year)

45c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)

50. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)

51. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)

52. PLURALITY-Single, Twin, Triplet, etc. (Specify)

53. IF NOT A SINGLE BIRTH – Born First, Second, Third, etc. (Specify)

54. TOTAL LIVE BIRTHS AT THIS DELIVERY

55. IS INFANT ALIVE AT THE TIME OF THIS REPORT? ☐ Yes ☐ No ☐ Unknown

56. IS INFANT BEING BREAST-FED AT DISCHARGE? ☐ Yes ☐ No ☐ Unknown

57. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy? ☐ Yes ☐ No ☐ Unknown

For each time period, enter either the number of cigarettes or the number of packs of cigarettes smoked. If none, enter "0".

Average number of cigarettes or packs of cigarettes smoked per day:

	No.	No.
Three months before pregnancy:	_____ cigarettes or	_____ packs
First three months of pregnancy:	_____ cigarettes or	_____ packs
Second three months of pregnancy:	_____ cigarettes or	_____ packs
Third Trimester of pregnancy:	_____ cigarettes or	_____ packs

58. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY
- ☐ Medicaid
- ☐ Private/Employer Ins.
- ☐ Self-pay
- ☐ Indian Health Service
- ☐ CHAMPUS/TRICARE
- ☐ Other government
- ☐ Other (Specify) _____
- ☐ Unknown

59. MOTHER'S MEDICAL RECORD NO.

60. NEWBORN'S MEDICAL RECORD NO.

61. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS? ☐ Yes ☐ No (If yes, enter facility name)

FACILITY TRANSFERRED FROM:

62. INFANT TRANSFERRED (Within 24 hours of delivery) ☐ Yes ☐ No (If yes, enter facility name)

FACILITY TRANSFERRED TO:

PRENATAL (Birth)

63. NUTRITION OF MOTHER

1. Height _____
2. Prepregnancy Weight _____
3. Weight at delivery _____
4. Did mother get WIC food for herself?
   Yes _____ No _____
   Unknown _____

64. MEDICAL RISK FACTORS (Check all that apply.)

1. ☐ Diabetes, prepregnancy
2. ☐ Diabetes, gestational
3. Hypertension
   - ☐ Prepregnancy (Chronic)
   - ☐ Gestational (PIH, preeclampsia)
   - ☐ Eclampsia
4. ☐ Previous preterm birth
5. ☐ Other previous poor pregnancy outcome (SGA, perinatal death, etc.)
6. ☐ Vaginal bleeding during this pregnancy prior to labor
7. ☐ Pregnancy resulted from infertility treatment (If yes, check all that apply.)
   - ☐ Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination
   - ☐ Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))
8. ☐ Mother had a previous cesarean delivery, if yes, how many? Number: _____
9. ☐ Alcohol use
   No. of drinks per week: _____
10. ☐ None of the above

65. METHOD OF DELIVERY

1. Forceps attempted? Yes ____ No____
   Successful Yes _____ No_____
2. Vacuum extraction attempted?
   Yes _____ No_____
   Successful Yes _____ No _____
3. Fetal presentation at delivery
   - ☐ Cephalic
   - ☐ Breech
   - ☐ Other
4. Final route and method of delivery (check one)
   - ☐ Vaginal/spontaneous
   - ☐ Vaginal/forceps
   - ☐ Vaginal/vacuum
   - ☐ Cesarean, if cesarean was a trial of labor attempted?
     Yes _____ No_____

LABOR-DELIVERY/NEWBORN

66. OBSTETRICAL PROCEDURES (Check all that apply.)

1. ☐ Cervical cerclage
2. ☐ Tocolysis
3. External cephalic version:
   - ☐ Successful
   - ☐ Failed
4. ☐ None of the above

67. ONSET OF LABOR (Check all that apply.)

1. ☐ Premature Rupture of the Membranes (prolonged, ≥ 12 hours)
2. ☐ Precipitous Labor (< 3 hrs)
3. ☐ Prolonged Labor (≥ 20 hrs)
4. ☐ None of the above

68. CHARACTERISTICS OF LABOR AND DELIVERY (Check all that apply.)

1. ☐ Induction of labor
2. ☐ Augmentation of labor
3. ☐ Non-vertex presentation
4. ☐ Steroids (glucocorticoids) for fetal lung maturation received by the mother prior to delivery
5. ☐ Antibiotics received by the mother during labor
6. ☐ Clinical chorioamnionitis diagnosed during labor or maternal temperature ≥ 38 C (100.4 F)
7. ☐ Moderate/heavy meconium staining of the amniotic fluid
8. ☐ Fetal intolerance of labor (examples: in-utero resuscitative measures, further fetal assessment, or operative delivery)
9. ☐ Epidural or spinal anesthesia during labor
10. ☐ None of the above

69. MATERNAL MORBIDITY
(Check all that apply.)
(These are complications associated with labor and delivery.)

1. ☐ Maternal transfusion
2. ☐ Third or fourth degree perineal laceration
3. ☐ Ruptured uterus
4. ☐ Unplanned hysterectomy
5. ☐ Admission to intensive care unit
6. ☐ Unplanned operating room procedure following delivery
7. ☐ None of the above

70. INFECTIONS PRESENT AND/OR TREATED
(During this pregnancy, check all that apply.)

1. ☐ Gonorrhea
2. ☐ Syphilis
3. ☐ Herpes Simplex Virus (HSV)
4. ☐ Chlamydia
5. ☐ Hepatitis B
6. ☐ Hepatitis C
7. ☐ AIDS or HIV antibody
8. ☐ None of the above

71. ABNORMAL CONDITIONS OF NEWBORN (Check all that apply)

1. ☐ Assisted ventilation required immediately following delivery
2. ☐ Assisted ventilation required for more than six hours
3. ☐ NICU admission
4. ☐ Newborn given surfactant replacement therapy
5. ☐ Antibiotics received by the newborn for suspected neonatal sepsis
6. ☐ Seizure or serious neurologic dysfunction
7. ☐ Significant birth injury (skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention
8. ☐ None of the above

72. VACCINES ADMINISTERED TO NEWBORN

1. ☐ Hepatitis B Date Given: _____
2. ☐ Other* Specify: _____
   Date Given: _____

73. APGAR SCORE

1 min	5 min	10 min

74. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.)

1. ☐ Anencephaly
2. ☐ Meningomyelocele/Spina bifida
3. ☐ Cyanotic congenital heart disease
4. ☐ Congenital diaphragmatic hernia
5. ☐ Omphalocele
6. ☐ Gastroschisis
7. ☐ Limb reduction defect (excluding congenital amputation and dwarfing syndromes)
8. ☐ Cleft Lip with or without Cleft Palate
9. ☐ Cleft Palate alone
10. ☐ Down Syndrome
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
11. ☐ Suspected chromosomal disorder
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
12. ☐ Hypospadias
13. ☐ Fetal alcohol syndrome
14. ☐ Other congenital anomalies *(Specify)* _____
15. ☐ None of the above

CHILD'S NAME _____ MOTHER'S NAME _____

Test required by K.S.A. 65-153f 153G Serological Test Made: _____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed If no test made, state reason:	Test required by K.S.A. 65-180 Infant Neonatal Screening specimen taken: _____ Yes _____ No If no test made, state reason:	Test required by K.S.A. 65-1157A Newborn Hearing Screening Accomplished: _____ Yes ____ No

Infant's patient number:

Infant's Primary Care Physician

First	Middle	Last	Title (MD, DO, etc.)

If screening accomplished,
Date hearing screened _____/_____/_____
Month Day Year

The results of the hearing screening ✓:
Right ear: _____ Pass _____ Refer for further testing
Left ear: _____ Pass _____ Refer for further testing

Physiologic equipment used ✓: _____ OAE _____ AABR _____ ABR

If screening not accomplished, ✓ one reason:

_____ b – missed appointment
_____ c – could not test
_____ d – deceased
_____ i – Incomplete test
_____ m – Infant discharged before screening
_____ n – transferred to NICU
_____ o – other
_____ r – did not consent
_____ s – scheduled but not completed
_____ t – transferred to another hospital
_____ u – no information
_____ x – invalid results

Kansas Department Of Health And Environment
Office of Vital Statistics

CERTIFICATE OF DEATH

State File Number

1. DECEDENT'S LEGAL NAME (First, Middle, Last)	2. SEX	3. IF FEMALE, NAME PRIOR TO FIRST MARRAIGE	4. DATE OF DEATH (Month, Day, Year)

5. SOCIAL SECURITY NUMBER	6. DATE OF BIRTH (Month, Day, Year)	7a. AGE-Last Birthday (Years)	7b. UNDER 1 YEAR Months	7b. UNDER 1 YEAR Days	7c. UNDER 1 DAY Hours	7c. UNDER 1 DAY Minutes	8. PLACE OF BIRTH (City and State or Foreign Country)

9. WAS DECEDENT EVER IN U.S. ARMED FORCES? ☐ Yes ☐ No ☐ Unknown	10a. PLACE OF DEATH (Check only one)
	HOSPITAL ☐ Inpatient ☐ DOA ☐ ER/Outpatient ☐ Nursing Home ☐ Hospice Facility ☐ Assisted Living Facility ☐ Decedent's Residence ☐ Other (Specify) _____

10b. FACILITY NAME (If not institution, give street and number)	10c. COUNTY OF DEATH	10d. CITY OR TOWN OF DEATH	10e. ZIP CODE

11. MARITAL STATUS ☐ Married ☐ Married, but separated ☐ Widowed ☐ Divorced ☐ Never Married ☐ Unknown	12. SURVIVING SPOUSE (If wife, give name before first marriage)

13a. RESIDENCE-STREET ADDRESS & APARTMENT NO.	13b. STATE

13c. COUNTY	13d. CITY OR TOWN	13e. ZIP CODE	13f. INSIDE CITY LIMITS? ☐ Yes ☐ No ☐ Unknown

14. FATHER'S NAME (First, Middle, Last)	15. MOTHER'S NAME PRIOR TO FIRST MARRIAGE (First, Middle, Last)

16a. INFORMANT'S NAME (First, Middle, Last)	16b. MAILING ADDRESS (Street and Number, City, State, Zip Code)	16c. RELATIONSHIP TO DECEDENT

17. METHOD OF DISPOSITION ☐ Burial ☐ Cremation ☐ Removal from State ☐ Donation ☐ Entombment ☐ Other (Specify) _____	18a. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place)	18b. LOCATION-City or Town, and State

19. FUNERAL SERVICE LICENSEE & LICENSE NO. (Signature) ➢	20. NAME OF EMBALMER & LICENSE NO.

21. NAME AND ADDRESS OF FIRM

22. CAUSE OF DEATH – Part I. Enter the chain of events - diseases, injuries, or complications-that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines, if necessary.

Approximate Interval: Onset to Death

IMMEDIATE CAUSE (Final disease or condition resulting in death)
a. _____
DUE TO (OR AS A CONSEQUENCE OF):

Sequentially list conditions, if any, leading to immediate cause listed on line a. Enter the **UNDERLYING CAUSE** (disease or injury that initiated the events resulting in death) LAST.
b. _____
DUE TO (OR AS A CONSEQUENCE OF):
c. _____
DUE TO (OR AS A CONSEQUENCE OF):
d. _____

PART II. Enter other significant conditions contributing to death, but not resulting in the underlying cause given in Part I.	23a. AUTOPSY ☐ Yes ☐ No ☐ Unknown	23b. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH? ☐ Yes ☐ No ☐ Unknown ☐ Not Applicable	23c. WAS CORONER CONTACTED? ☐ Yes ☐ No ☐ Unknown

24. DID TOBACCO USE CONTRIBUTE TO DEATH? ☐ Yes ☐ Probably ☐ No ☐ Unknown	25. IF FEMALE ☐ Not pregnant within past year ☐ Pregnant at time of death ☐ Not pregnant, but pregnant within 42 days of death ☐ Not pregnant, but pregnant 43 days to 1 year before death ☐ Unknown if pregnant within the last year	26. MANNER OF DEATH ☐ Natural ☐ Homicide ☐ Accident ☐ Pending Investigation ☐ Suicide ☐ Could not be determined

27a. DATE OF INJURY (Month, Day, Year)	27b. TIME OF INJURY A.M. P.M.	27c. INJURY AT WORK ☐ Yes ☐ No	27d. DESCRIBE HOW INJURY OCCURRED

27e. PLACE OF INJURY-Residence, farm, street, factory, building, etc. (Specify)	27f. LOCATION (Street and Number or Rural Route, City or Town, State, Zip Code)

28a. DATE PRONOUNCED DEAD (Month, Day, Year)	28b. TIME PRONOUNCED DEAD A.M. P.M.	28c. ACTUAL OR PRESUMED TIME OF DEATH A.M. P.M.	28d. NAME OF PERSON PRONOUNCING DEATH (If applicable)	28e. LICENSE NO.

29a. **CERTIFIER** (Check only one)
☐ Certifying physician - To the best of my knowledge, death occurred due to the cause(s) and manner stated.
☐ Pronouncing & Certifying physician - To the best of my knowledge, death occurred at the time, date, and place, and due to the cause(s) and manner stated.
☐ Coroner - On the basis of examination, and/or investigation, in my opinion, death occurred at the time, date, and place, and due to the cause(s) and manner stated.

Signature of certifier ➢ LICENSE NO. DATE CERTIFIER SIGNED

29b. NAME, ADDRESS, AND ZIP CODE OF PERSON COMPLETING CAUSE OF DEATH ☐ M.D. ☐ D.O.	30. DATE FILED BY STATE REGISTRAR (Month, Day, Year)

31. ANCESTRY-What is this person's ancestry or ethnic origin? Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)

32. HISPANIC ORIGIN (Check the box or boxes that best describes whether the decedent is Spanish/Hispanic/Latino. Check the "no" box if the decedent is not Spanish/Hispanic/Latino)

- ☐ No, not Spanish/Hispanic/Latino
- ☐ Yes, Mexican/Mexican American/Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/Hispanic/Latino (Specify)

_____

- ☐ Unknown

33. RACE (Check one or more boxes to indicate what race(s) the decedent considered himself or herself to be.)

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native (Name of the enrolled or principal tribes)

_____

_____

- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian (Specify)

_____

_____

- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander (Specify)

_____

_____

- ☐ Other (Specify)

_____

_____

- ☐ Unknown

34. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of death.)

- ☐ 8th grade or less
- ☐ 9th - 12th grade; no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA, AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)
- ☐ Unknown

35. DECEDENT'S USUAL OCCUPATION (Give kind of work done during most of working life. Do not use retired.)

36. KIND OF BUSINESS/INDUSTRY (Do not give name of company.)

Kansas Department of Health and Environment
Office of Vital Statistics

CERTIFICATE OF STILLBIRTH (FETAL DEATH)

State File Number

1. NAME (First, Middle, Last, Suffix)	2. DATE OF DELIVERY (Month, Day, Year)	3. TIME OF DELIVERY M
4. SEX	5. CITY, TOWN, OR LOCATION OF DELIVERY	6. COUNTY OF DELIVERY

7. PLACE OF DELIVERY	8. FACILITY NAME (If not institution, give street and number and zip code)
☐ Hospital ☐ Freestanding Birthing Center ☐ Home Delivery ☐ Clinic/Doctor's Office ☐ Other (Specify) _____	

9. MOTHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)	10. MOTHER'S LAST NAME PRIOR TO FIRST MARRIAGE

11. DATE OF BIRTH (Month, Day, Year)	12. BIRTHPLACE (State, Territory, or Foreign Country)	13. PRESENT RESIDENCE-STATE

14. COUNTY	15. CITY, TOWN, OR LOCATION	16. STREET AND NUMBER OF PRESENT RESIDENCE

17. ZIPCODE	18. INSIDE CITY LIMITS? ☐ Yes ☐ No	19. MOTHER'S MAILING ADDRESS (If same as residence, leave blank)

20. FATHER'S CURRENT LEGAL NAME (First, Middle, Last, Suffix)	21. DATE OF BIRTH (Month, Day, Year)	22. BIRTHPLACE (State, Territory, or Foreign Country)

23. I CERTIFY THAT THE PERSONAL INFORMATION PROVIDED ON THE CERTIFICATE IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. Signature of Parent (or Other Informant) ➢	24. DATE SIGNED (Month, Day, Year)

25. CAUSE/CONDITIONS CONTRIBUTING TO FETAL DEATH

25a. INITIATING CAUSE/CONDITION (Among the choices below, please select the one which most likely began the sequence of events resulting in the death of the fetus.)

Maternal Conditions/Diseases (Specify) _____

Complications of Placenta, Cord, or Membranes – ☐ Rupture of membranes prior to onset of labor ☐ Abruptio placenta ☐ Placental insufficiency ☐ Prolapsed cord ☐ Chorioamnionitis ☐ Other (Specify) _____

Other Obstetrical or Pregnancy Complications (Specify) _____ Fetal Anomaly (Specify) _____

Fetal Injury (Specify) _____ Fetal Infection (Specify) _____

Other Fetal Conditions/Disorders (Specify) _____ ☐ Unknown

25b. OTHER SIGNIFICANT CAUSES OR CONDITIONS (Select or specify all other conditions contributing to death in item 25a.)

Maternal Conditions/Diseases (Specify) _____

Complications of Placenta, Cord, or Membranes – ☐ Rupture of membranes prior to onset of labor ☐ Abruptio placenta ☐ Placental insufficiency ☐ Prolapsed cord ☐ Chorioamnionitis ☐ Other (Specify) _____

Other Obstetrical or Pregnancy Complications (Specify) _____ Fetal Anomaly (Specify) _____

Fetal Injury (Specify) _____ Fetal Infection (Specify) _____

Other Fetal Conditions/Disorders (Specify) _____ ☐ Unknown

26. ESTIMATED TIME OF FETAL DEATH	27a. WAS AN AUTOPSY PERFORMED?	27b. WAS A HISTOLOGICAL PLACENTAL EXAMINATION PERFORMED?
☐ Dead at time of first assessment, no labor ongoing ☐ Dead at time of first assessment, labor ongoing ☐ Died during labor, after first assessment ☐ Unknown time of fetal death	☐ Yes ☐ No ☐ Planned	☐ Yes ☐ No ☐ Planned
	27c. WERE AUTOPSY OR HISTOLOGICAL PLACENTAL EXAMINATION RESULTS USED IN DETERMINING THE CAUSE OF FETAL DEATH? ☐ Yes ☐ No	

28. I CERTIFY THAT THIS DELIVERY OCCURRED ON THE DATE STATED ABOVE AND THE FETUS WAS BORN DEAD. Signature ➢	29. DATE SIGNED (Month, Day, Year)	30. ATTENDANT'S NAME AND TITLE (If delivery not attended by physician) Name (Type) _____ ☐ CNM/CM ☐ Other Midwife ☐ Other (Specify)_____

31. CERTIFIER'S NAME AND TITLE (Type) ☐ M.D. ☐ D.O. ☐ Other (Specify)_____	32. CERTIFIER'S MAILING ADDRESS (Street and Number or Rural Route, City or Town, State, Zip Code)	33a. METHOD OF DISPOSITION ☐ Burial ☐ Cremation ☐ Donation ☐ Hospital Disposition ☐ Removal from State ☐ Other (Specify) _____

33b. PLACE OF DISPOSITION (Name of cemetery, crematory, or other place)	33c. LOCATION (City or Town, and State)

34. FUNERAL DIRECTOR OR HOSPITAL ADMINISTRATOR Signature ➢	35. FIRM OR HOSPITAL NAME AND ADDRESS	36. DATE FILED BY STATE REGISTRAR (Month, Day, Year)

CONFIDENTIAL INFORMATION FOR INTERNAL USE ONLY

37. IF HOME DELIVERY, WAS DELIVERY PLANNED AT HOME? ☐ Yes ☐ No ☐ Unknown

38. MOTHER'S MEDICAL RECORD NO.

39a. WAS MOTHER EVER MARRIED? ☐ Yes ☐ No ☐ Unknown

39b. MOTHER MARRIED? (At birth, conception or any time between) ☐ Yes ☐ No ☐ Unknown

40. PARENT'S HISPANIC ORIGIN (Check the box or boxes that best describes whether the parent is Spanish, Hispanic, or Latino. Check the "no" box if the parent is not Spanish, Hispanic, or Latino.)

40a. MOTHER-
- ☐ No, not Spanish/ Hispanic/Latina
- ☐ Yes, Mexican/Mexican American/Chicana
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/ Hispanic/Latina (Specify) _____
- ☐ Unknown

40b. FATHER-
- ☐ No, not Spanish/ Hispanic/Latino
- ☐ Yes, Mexican/Mexican American/Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Central American
- ☐ Yes, South American
- ☐ Yes, other Spanish/ Hispanic/Latino (Specify) _____
- ☐ Unknown

41. PARENT'S RACE (Check one or more races to indicate what you consider yourself to be.)

41a. MOTHER		41b. FATHER	
☐ White	☐ Native Hawaiian	☐ White	☐ Native Hawaiian
☐ Black or African American	☐ Guamanian or Chamorro	☐ Black or African American	☐ Guamanian or Chamorro
☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ _____	☐ Samoan ☐ Other Pacific Islander (Specify) _____ _____	☐ American Indian or Alaska Native (Name of the enrolled or principal tribes) _____ _____	☐ Samoan ☐ Other Pacific Islander (Specify) _____ _____
☐ Asian Indian ☐ Chinese ☐ Filipino ☐ Japanese ☐ Korean ☐ Vietnamese ☐ Other Asian (Specify) _____	☐ Other (Specify) _____ _____ ☐ Unknown	☐ Asian Indian ☐ Chinese ☐ Filipino ☐ Japanese ☐ Korean ☐ Vietnamese ☐ Other Asian (Specify) _____	☐ Other (Specify) _____ _____ ☐ Unknown

42. ANCESTRY - What is the parents' ancestry or ethnic origin?- Italian, German, Dominican, Vietnamese, Hmong, French Canadian, etc. (Specify below)

43. OCCUPATION AND BUSINESS/INDUSTRY

	Occupation	Business/Industry (Do not give name of company.)
42a. MOTHER	43a. MOTHER (Most recent)	43c. MOTHER
42b. FATHER	43b. FATHER (Usual)	43d. FATHER

44. EDUCATION (Check the box that best describes the highest degree or level of school completed at the time of delivery.)

44a. MOTHER'S EDUCATION
- ☐ 8th grade or less
- ☐ 9th - 12th grade, no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA,AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Unknown
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

44a. FATHER'S EDUCATION
- ☐ 8th grade or less
- ☐ 9th - 12th grade, no diploma
- ☐ High school graduate or GED
- ☐ Some College credit, but no degree
- ☐ Associate degree (e.g., AA,AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Unknown
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DVM, LLB, JD)

45. PREVIOUS LIVE BIRTHS (Do not include this child.)
- 45a. Now living Number _____ ☐ None
- 45b. Now dead Number _____ ☐ None

46. NUMBER OF OTHER OUTCOMES (Spontaneous or induced losses or ectopic or stillbirth pregnancies)
- 46a. Before 20 weeks Number _____ ☐ None
- 46b. 20 weeks & over Number _____ ☐ None

47. PLURALITY – Single, Twin, Triplet, etc. (Specify)

48. IF NOT A SINGLE BIRTH – Born First, Second, Third, etc. (Specify)

49. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)

50. OBSTETRIC ESTIMATE OF GESTATION (Completed Weeks)

45c. DATE OF LAST LIVE BIRTH (Month, Year)

46c. DATE OF LAST OTHER PREGNANCY OUTCOME (Month, Year)

51. WEIGHT OF FETUS (grams)

52. PRENATAL CARE? ☐ Yes ☐ No

53. DATE OF FIRST PRENATAL CARE VISIT (Month, Day, Year)

54. DATE OF LAST PRENATAL CARE VISIT (Month, Day, Year)

55. PRENATAL VISIT – Total number (If none, enter "0")

56. CIGARETTE SMOKING BEFORE & DURING PREGNANCY: Did mother smoke 3 mos. before or during pregnancy?
☐ Yes ☐ No ☐ Unknown

For each time period, enter either the number of cigarettes or the number of packs of cigarettes **smoked per day**. If none, enter "0".

Average number of cigarettes or packs of cigarettes smoked **per day**:

	No.	No.
Three months before pregnancy:	_____ cigarettes or	_____ packs
First three months of pregnancy:	_____ cigarettes or	_____ packs
Second three months of pregnancy:	_____ cigarettes or	_____ packs
Third Trimester of pregnancy:	_____ cigarettes or	_____ packs

57. PRINCIPAL SOURCE OF PAYMENT FOR THIS DELIVERY
- ☐ Medicaid
- ☐ Private/Employer Ins.
- ☐ Self-pay
- ☐ Indian Health Service
- ☐ CHAMPUS/TRICARE
- ☐ Other government
- ☐ Other
- ☐ Unknown

58a. MOTHER TRANSFERRED IN FOR DELIVERY DUE TO MATERNAL, MEDICAL, OR FETAL INDICATIONS?
☐ Yes ☐ No (If yes, enter facility name)

58b. FACILITY TRANSFERRED FROM:

CHILD'S NAME _____ MOTHER'S NAME _____

PRENATAL	LABOR-DELIVERY/STILLBORN FETUS

59. NUTRITION OF MOTHER

1. Height _____
2. Prepregnancy Weight _____
3. Weight at delivery _____
4. Did mother get WIC food for herself?

   Yes _____ No _____ Unknown ___

60. MEDICAL RISK FACTORS (Check all that apply.)

1. ☐ Diabetes, prepregnancy
2. ☐ Diabetes, gestational
3. Hypertension
   - ☐ Prepregnancy (Chronic)
   - ☐ Gestational (PIH, preeclampsia)
   - ☐ Eclampsia
4. ☐ Previous preterm birth
5. ☐ Other previous poor pregnancy outcome (SGA, perinatal death, etc.)
6. ☐ Vaginal bleeding during this pregnancy prior to labor
7. ☐ Pregnancy resulted from infertility treatment (If yes, check all that apply.)
   - ☐ Fertility-enhancing drugs, Artificial insemination or Intrauterine insemination
   - ☐ Assisted reproductive technology (e.g. in vitro fertilization (IVF), gamete intrafallopian transfer (GIFT))
8. ☐ Mother had a previous cesarean delivery, if yes, how many Number ___
9. ☐ Alcohol use No. of drinks per week: _____
10. ☐ None of the above

61. METHOD OF DELIVERY

1. Forceps attempted? Yes ____ No____
   Successful: Yes _____ No_____
2. Vacuum extraction attempted?
   Yes _____ No_____
   Successful: Yes _____ No _____
3. Fetal presentation at delivery
   - ☐ Cephalic
   - ☐ Breech
   - ☐ Other
4. Final route and method of delivery (check one)
   - ☐ Vaginal/spontaneous
   - ☐ Vaginal/forceps
   - ☐ Vaginal/vacuum
   - ☐ Cesarean, if cesarean was a trial of labor attempted?
     Yes _____ No_____
5. Hysterotomy/Hysterectomy
   Yes _____ No _____

62. MATERNAL MORBIDITY (Check all that apply.)
(These are complications associated with labor and delivery.)

1. ☐ Maternal transfusion
2. ☐ Third or fourth degree perineal laceration
3. ☐ Ruptured uterus
4. ☐ Unplanned hysterectomy
5. ☐ Admission to intensive care unit
6. ☐ Unplanned operating room procedure following delivery
7. ☐ None of the above

63. INFECTIONS PRESENT AND/OR TREATED (During this pregnancy, check all that apply.)

1. ☐ Gonorrhea
2. ☐ Syphilis
3. ☐ Herpes Simplex Virus (HSV)
4. ☐ Chlamydia
5. ☐ Listeria
6. ☐ Group B Streptococcus
7. ☐ Cytomeglovirus
8. ☐ Parvo virus
9. ☐ Toxoplasmosis
10. ☐ AIDS or HIV antibody
11. ☐ None of the above
12. ☐ Other (Specify) _____

64. CONGENITAL ANOMALIES OF THE NEWBORN (Check all that apply.)

1. ☐ Anencephaly
2. ☐ Meningomyelocele/Spina bifida
3. ☐ Cyanotic congenital heart disease
4. ☐ Congenital diaphragmatic hernia
5. ☐ Omphalocele
6. ☐ Gastroschisis
7. ☐ Limb reduction defect (excluding congenital amputation and dwarfing syndromes)
8. ☐ Cleft Lip with or without Cleft Palate
9. ☐ Cleft Palate alone
10. ☐ Down Syndrome
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
11. ☐ Suspected chromosomal disorder
    - ☐ Karyotype confirmed
    - ☐ Karyotype pending
12. ☐ Hypospadias
13. ☐ Fetal alcohol syndrome
14. ☐ Other congenital anomalies *(Specify)* _____
15. ☐ None of the above

THIS IS NOT PART OF THE CERTIFICATE OF STILLBIRTH
Test required by K.S.A. 65-153F, 153G

Serological Test Made: _____ 1st _____ 2nd _____ 3rd (Trimester) _____ At Delivery _____ Not Performed

If no test made, state reason: _____